Agricultural Research Institute
PUSA

ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

STATE OF ILLINOIS

WITH REPORTS FROM

COUNTY AGRICULTURAL BOARDS,

FOR THE YEAR 1881.

EDITED BY

S. D. FISHER, Secretary.

VOL XIX OLD SERIES. VOL. XI NEW SERIES.

Vols. 1, 2, KENNICOTT; 3, FRANCIS; 4, 5, 6, 7, 8, REYNOLDS;
9, 10, 11, 12, GARLAND; 13, 14, 15, 16, 17, 18, 19, FISHER.

SPRINGFIELD, ILL.:
H. W. ROKKER, STATE PRINTER AND BINDER,
1882.

LETTER OF TRANSMITTAL.

To His Excellency, SHELBY M. CULLOM, *Governor of Illinois:*

SIR—I have the honor to transmit herewith the annual report of the State Board of Agriculture, for the year 1881; also sundry papers relating to agriculture.

Very respectfully,
SPRINGFIELD, March, 1882. S. D. FISHER, *Secretary.*

MEMBERS

OF THE

ILLINOIS STATE BOARD OF AGRICULTURE,

FOR 1881-82.

President..........................J. R. SCOTT..........................Champaign
Ex-President......................D. B. GILLHAM......................Upper Alton
Secretary..........................S. D. FISHER.........................Springfield
Asst.-Secretary...................CHARLES F. MILLS..................Springfield
Treasurer..........................JOHN W. BUNN.......................Springfield

Vice-Presidents:

1st District—Lewis Ellsworth...Naperville
2d District—H. D. Emery...........Chicago
3d District—John P. Reynolds... Chicago
4th District—Geo. S. Haskell......Rockford
5th District—J. L. Moore....................Polo
6th District—Sam'l Dysart Franklin Grove
7th District—Chas. Snoad ....Joliet
8th District—Emory Cobb........Kankakee
9th District—D. W. Vittum, Jr.......Canton
10th District—E. B. David................Aledo
11th District—David E. Beaty....Jerseyville
12th District—J. W. Judy...............Tallula
13th District—W. M. Smith........Lexington
14th District—Wm. Voorhies, Jr.. .Voorhies
15th District—E. H. Bishop.........Effingham
16th District—B. Pullen ....Centralia
17th District—David Gore.........Carlinville
18th District—Jas. M. Washburn.Carlinville
19th District—John Landrigan....... Albion

LIST OF COUNTIES

Comprising Congressional Districts in Illinois.

First District—The First, Second, Third, Fourth, Fifth, Sixth and Seventh wards of the city of Chicago, the Towns of Hyde Park, Lake, Lyons, Riverside, Lemont, Palos, Worth, Calumet, Orland, Bremen, Thornton, Rich and Bloom, in Cook county, and the county of DuPage.

Second District—The Eigth, Ninth, Tenth, Eleventh, Twelfth, Thirteenth, Fourteenth and Fifteenth wards of the city of Chicago.

Third District—The Sixteenth, Seventeenth, Eighteenth, Nineteenth and Twentieth wards of the city of Chicago, the towns of Cicero, Proviso, Jefferson, Leyden, Lake View, Evanston, Niles, Maine, Elk Grove, Schaumburg, Hanover, Barrington, Palestine, Wheeling, Northfield and New Trier, in the county of Cook, and the county of Lake.

Fourth District—Kane, DeKalb, McHenry, Boone and Winnebago.

Fifth District—Stephenson, JoDaviess, Carroll, Whiteside and Ogle.

Sixth District—Lee, Bureau, Putnam, Henry and Rock Island.

Seventh District—LaSalle, Kendall, Grundy and Will.

Eighth District—Kankakee, Iroquois, Ford, Livingston, Woodford and Marshall.

Ninth District—Stark, Peoria, Knox and Fulton.

Tenth District—Mercer, Henderson, Warren, Hancock, McDonough and Schuyler.

Eleventh District—Adams, Brown, Pike, Calhoun, Greene and Jersey.

Twelfth District—Scott, Morgan, Cass, Menard, Sangamon and Christian.

Thirteenth District—Mason, Tazewell, McLean, Logan and DeWitt.

Fourteenth District—Macon, Piatt, Champaign, Douglas, Coles and Vermilion.

Fifteenth District—Edgar, Clark, Cumberland, Moultrie, Shelby, Effingham, Jasper Crawford and Lawrence.

Sixteenth District—Montgomery, Fayette, Bond, Clinton, Washington, Marion and Clay.

Seventeeth District—Macoupin, Madison, St. Clair and Monroe.

Eighteenth District—Randolph, Perry, Jackson, Union, Williamson, Johnson, Pope Massac, Pulaski and Alexander.

Nineteenth District—Richland, Wayne, Edwards, Wabash, Jefferson, Franklin, Hamilton, White, Saline, Gallatin and Hardin.

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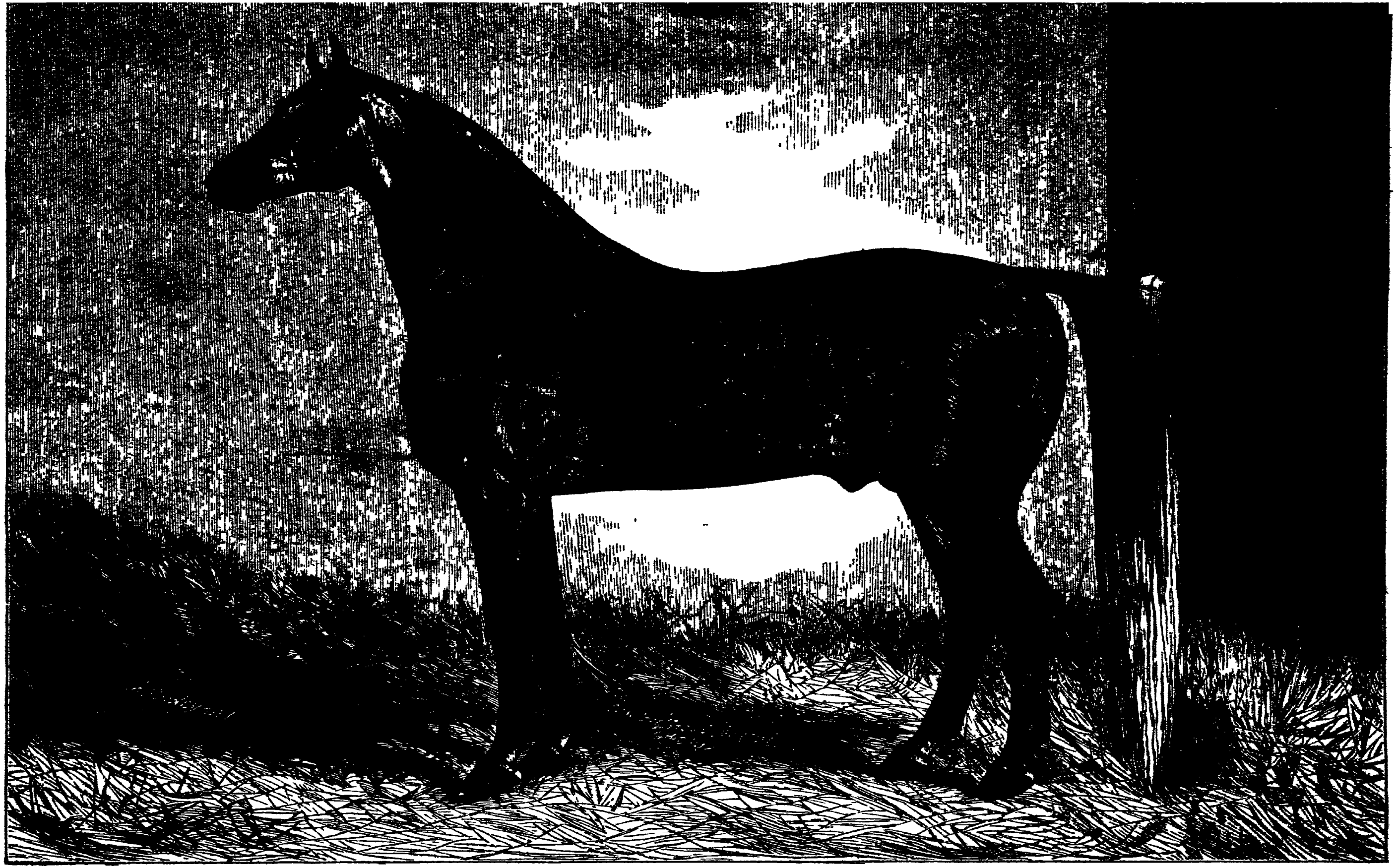

Roadster Stallion "George Sprague," exhibited by Wm. Babcock & Son Canton Ill. Awarded Sweepstake Premium State Fair, 1881.—p 1

NINETEENTH ANNUAL REPORT

OF THE

ILLINOIS STATE BOARD OF AGRICULTURE.

ROOMS OF THE DEPARTMENT OF AGRICULTURE,
SPRINGFIELD, Tuesday, January 11, 1881,
10 o'clock A. M.

The State Board of Agriculture elect met, and was called to order by James R. Scott, President elect.

Upon the call of the roll the following members answered to their names:

President Scott, Ex-President Gillham, Vice-Presidents Ellsworth, Emery, Reynolds, Moore, Snoad, Cobb, David, Beaty, Judy, Voorhies, Pullen, Gore and Landrigan.

Minutes of the sessions of the retiring Board, held Wednesday, January 5, 1881, were read and adopted.

On motion of Mr. Reynolds,

President Scott called Mr. Judy to the chair, and addressed the Board as follows:

PRESIDENT'S ADDRESS.

Prosperous Year.

The year which has just closed will rank among the most prosperous periods in the agricultural history of the State, and expressions of sincere gratitude to the giver of such blessings are becoming in a people enjoying in such a great measure the returns of so bountiful a harvest.

The condition of the agriculture of the State is such as to inspire great confidence in the future prosperity of all classes dependent upon the production of the soil.

The evidence of prosperous times may be seen on almost every farm in the State, in the improved condition of farm buildings and fences, the unusually large demand for the improved breeds of live stock, the vast quantity of drain tile manufactured and sold annually in the State, the incapacity of the large storage room in the elevators and warehouses to store the great accumulations of produce that, notwithstanding increased transportation facilities, is accumulating at the great distributing points.

The large deposits of funds at the banks by our farmers, and the general payment of mortgages and loans of late years by the tillers of the soil, has seldom, if ever, been equaled, and is conclusive proof of the profits attending the well directed efforts of the Illinois farmer.

This favorable improvement is in a great measure owing to the extensive system of drainage being carried out, the growing of a greater diversity of crops and more thorough cultivation.

Work of the Department.

The scope of the work of this Board has been largely increased of late years, and the thorough and creditable manner in which it has been performed has placed the Illinois State Board of Agriculture in a prominent position before the people of the State as a progressive organization, anxious and willing to promote the interests of agriculture, horticulture, manufactures and domestic arts.

The present demands upon the Board by the progressive agriculturists and the varied interests of the State are such as to admit of no backward step in our work, or the consideration of any but the most progressive policy in developing its resources, and our watchword should be ADVANCEMENT.

The responsibilities of the Board to the interests it represents are such as should, and doubtless will, impel every member to spare no thought or labor that is necessary to direct the mind and effort of all engaged in agriculture to the most thorough and profitable modes of farming, and encourage a system of management that will insure as well as elevate this calling to the high position its importance demands and its merit warrants, as second to none of the other professions.

The wisdom and disposition of the Board are sufficient to devise and execute new measures for the advancement of agriculture, and as the honored representatives of this great interest it will be only necessary to call attention to this matter and suggest that an evening session during this week be especially devoted to the discussion of ways and means by which the Board may better meet the increasing requirements of the more progressive agriculturists, as well as to stimulate all engaged therein to obtain better results.

Among the questions that might be considered worthy of attention is the

Relation of the State Board to County Agricultural Boards.

The State Board of Agriculture has not fully secured the coöperation of the county organizations in advancing the general interests of agriculture, and, with few exceptions, the county societies have considered the holding of fairs to be the prime or only object for which they were organized.

These associations are composed of the most enterprising and progressive agriculturists in their respective counties, and there is no question as to their coöperation in any work likely to promote the interests of the State.

This element of strength is well organized, and could be made most effective in promoting the objects for which the Department of Agriculture was created.

How to best utilize this effective force is a question worthy of much consideration. The efforts of the several county boards of agriculture to create a spirit of emulation among the progressive farmers of their respective counties would result in incalculable benefit to the State. This result can be attained by the offer of premiums for various objects, viz: the best improved farm, the most perfect system of farm drainage, the best results attending the growing of diversified crops, success in breeding and feeding meat-producing animals, etc., etc.

Elections.

This Board has entrusted to its care the most important interests of this, the leading agricultural State in the Union, and the best results can be attained only through the most earnest and united efforts of all its members. Any matter that is calculated to create factions, or distract the attention or support of any members from the legitimate work we are entrusted by law to perform, should receive that attention its importance demands, and such action be promptly taken as will remove any obstacle that is in the least calculated to interfere with harmony and unity of sentiment in the real work of the department.

That zealous, earnest and patriotic service necessary to success cannot be rendered the interests of the State, if our attention and thought is directed to minor considerations, and it is hoped that the previous reputation of the members of the Board which has heretofore prompted them to render efficient service in the most unostentatious and unselfish manner may be sustained.

The time and manner of holding elections of members of this Board of late has been the subject of much criticism, and so frequently has the matter been called to my attention by the best friends of agriculture that I do not hesitate to ask the Board to consider the question at this meeting, believing that a free discussion of the same would result in the adoption of wise measures for the enactment of a law that will command the endorsement of the members of the General Assembly.

The prevailing sentiment of the great majority with whom I have conversed on the subject is in favor of having the elections held at Springfield, just previous to the winter meeting of the Board; that each County Agricultural Board be represented at the election by the President of the society, and that in counties where no Agricultural Board exists, the proper county officials appoint a man to represent the county.

The present manner of holding elections during the week of the State Fair greatly interferes with the management thereof, and is the cause of much unfavorable comment by our constituents.

The reference of this subject to a special committee would ensure wise deliberations and such action as may be necessary to meet the emergency.

State Fair.

The Illinois State Fair is properly recognized as the great industrial exhibition of the State. It is important that the public be frequently brought into contact with the successful live-stock breeders, the most skillful inventors of labor-saving machinery, the more progressive agriculturists, as well as the people especially interested in fine and domestic arts, educational and other matters that enter into the every-day life of our people.

It is the duty of the Board to spare no effort or reasonable expense in obtaining the services of the most competent judges to pass upon the animals or articles which are placed on exhibition at considerable expense to the owners, who frequently sustain heavy losses by accident during shipment.

The general public as well as exhibiters appreciate the necessity of having expert judges employed, as the awards by recognized authorities are valuable in aiding the masses by comparison to judge of the comparative merits of the several exhibits, and thereby be better enabled to keep pace with the march of improvement in stock breeding, invention and general agriculture.

The rapid development of the interests the Board is expected to foster prompts the public to increase their demands for additional attractions, and the enlargement of the scope of the annual exhibitions, from time to time, is necessary to keep pace with the growth of the other industrial interests of the State.

The reports of the Fat Stock Show published by the Board have been widely copied by the press and are highly prized by all interested in meat production, and the publication of similar committee reports of the exhibition of stock at our Fairs would be highly acceptable to exhibiters and preserve information of much value to breeders in the future.

Location of the State Fair.

The further discussion of the question of permanently locating the State Fair at one or three points by the general public is desirable to the end that the Board may take such action as will meet the views of the majority of the people most deeply interested in the Illinois State Fair. The subject is of such importance as to require much deliberation and thorough discussion by the County Agricultural societies, as well as the press of the State, and is desirable to the end that the Board may act in accordance with the prevailing sentiment of the farmers, manufacturers and others interested in promoting the industrial interests of the State.

The reference of this matter to a committee for more thorough investigation is suggested, said committee to receive full instruction of the Board as to procedure, and report at a future meeting of the Board.

Agricultural Education.

The necessity of increasing the number of intelligent and practical farmers in the State is so apparent as to require no argument, and the Board is so thoroughly in sympathy with all the efforts put forth by the State to bring about this result through the School of Agriculture in connection with the Industrial University as to make any suggestions as to the advisability of more hearty cooperation on the part of this Board with the School of Agriculture to appear unnecessary; but the benefit likely to result from the action of the State Board of Agriculture in the matter leads me to suggest the discussion of the question as to what plan of coöperation may be adopted by the Board for increasing the usefulness of the State University as a medium of imparting practical agricultural education to a larger number of young men.

Fat Stock Show.

Not the least important work of the Board has been the successful establishment of the Fat Stock Shows, which have done much to educate and stimulate feeders and breeders of meat animals to a more profitable system of production, and the results of some of the exhibitions have demonstrated the fact that but few engaged in this branch of agriculture have realized the possibilities in the way of early maturity and superior quality that can be generally attained by the adoption of more intelligent and improved methods of breeding and feeding.

The great benefits to accrue to farmers engaged in meat production by the continuance of this practical and important school of instruction is such as to make it necessary to continue the exhibitions, with such new features from year to year as the experience of the Board may approve and the means at command may warrant.

It is recommended that this matter be referred to a committee of five, who shall be authorized, if the subscriptions to the premium and expense fund shall justify the holding of another show, to proceed to make the necessary arrangements therefor, the show to be held at such time and place this fall as the Board may direct.

Diseases of Domestic Animals.

The annual losses to the stock men of the country, resulting from the want of proper sanitary laws and veterinary supervision on the part of the National as well as the several State governments, are so great as to demand the most earnest and determined efforts on the part of the friends of meat producers to secure the enactment of laws that will speedily stamp out infectious diseases wherever they exist, and provide for competent inspection, that will enable shippers of stock not infected to obtain a "clean bill of health" that will not be questioned by the authorities of any foreign port where American cattle find a profitable market.

The consideration of this question by a committee would doubtless result in deciding upon some efficient plan likely to aid in securing necessary legislation.

Museum.

The committee having charge of the Museum have added largely to the attractions during the past year, as will be seen by the report of the Museum Committee.

The collection is such as to give great encouragement for a creditable exhibit of the agricultural products of the State at no distant date.

The Curator has been quite successful in her personal efforts to make additions to the collection as well as to advertise the varied resources of the State, by displaying to the best advantage the cereals and other non-perishable products of the State on exhibition.

Library.

The library of the department has received many valuable additions during the past year, and, while not complete, serves a very useful purpose for reference, it being the only Agricultural Library in the State open to the general public, that presents so varied and complete a collection of practical and scientific works relating to the various departments of agriculture.

On motion of Mr. Gillham,

The President's address was referred to a committee of three.

The acting Chairman appointed as said committee—

Messrs. Gillham, Ellsworth and Cobb.

President Scott resumed the chair.

Motion of Mr. Reynolds carried—

That S. D. Fisher be elected Secretary and John W. Bunn be elected Treasurer for the next two years, by acclamation.

On motion of Mr. Gillham,

Charles F. Mills, of Springfield, was by acclamation elected Assistant Secretary of the Board for the next two years.

On motion of Mr. Pullen,

The following resolution, introduced by Mr. Gillham, was adopted:

Resolved, That the President is hereby authorized to appoint for the years 1881 and 1882 Superintendents of the various departments of the State Fair and Fat Stock Shows, the regular committees of the Board, the Curator of the Museum, the janitor and any additional clerical force necessary, the President to be chairman of the committees on Reception, Crop Reports, Printing, Museum, Transportation, Appropriations and the Committee of Arrangements.

On motion of Mr. Landrigan,

Two o'clock P. M. was made the hour for the consideration of the premium list for the Fair of 1881.

On motion of Mr. Ellsworth,

The Board adjourned until 2 o'clock P. M.

AFTERNOON SESSION.

Board met pursuant to adjournment.

President Scott in the chair.

Present: President Scott, Ex-President Gillham, Vice-Presidents Ellsworth, Emery, Reynolds, Moore, Snoad, Cobb, Vittum, David, Beaty, Judy, Voorhies, Pullen, Gore and Landrigan.

The special order being the consideration of the premium list, and coming up,

On motion of Mr. Cobb,

The Board went into the committee of the whole for the revision of the premium list.

Mr. Cobb in the chair.

After consideration of the premium list in Classes A, B, C, D, E and F, the committee, at 6 P. M.,

On motion of Mr. Snoad,

Rose, reported progress, and asked leave to sit again. Granted.

On motion of Mr. Gillham,

The Board adjourned to 7½ o'clock P. M.

EVENING SESSION.

Board met as per adjournment.

President Scott in the chair.

Present: President Scott, Ex-President Gillham, Vice-Presidents Ellsworth, Emery, Moore, Snoad, Cobb, Vittum, David, Beaty, Judy, Voorhies, Pullen, Gore and Landrigan.

Board resumed the work of the revision of the premium list in the committee of the whole, with Mr. Cobb in the chair.

After the consideration of the premium list in Classes F Section 2, G, H Sections 1 and 2, I, K and L, the committee, at 10 o'clock,

On motion of Mr. Gillham,

Rose, reported progress, and asked leave to sit again. Granted.

On motion of Mr. Judy,

The Board adjourned to 9 o'clock A. M., Wednesday, January 12, 1881.

WEDNESDAY, January 12, 1881—9 o'clock A. M.

Board met as per adjournment.

President Scott in the chair.

Present: President Scott, Ex-President Gillham, Vice-Presidents Ellsworth, Emery, Reynolds, Moore, Dysart, Snoad, Cobb, Vittum, David, Beaty, Judy, Smith, Voorhies, Bishop, Pullen, Gore, Washburn and Landrigan.

Minutes of yesterday's session read, and,

On motion of Mr. Cobb,

Adopted.

Communication from the late McHenry County Agricultural Board was read, asking information concerning the status of the organization under the recent act of the General Assembly relating to County Agricultural Boards.

On motion of Mr. Gillham,

The communication was referred to a committee to be appointed by the chair.

President appointed as said committee Messrs. Gillham, Washburn and Vittum.

Board resumed the work of the revision of the premium list in the committee of the whole, with Mr. Snoad in the chair.

After the consideration of the premium list in Class N, and the rules and regulations for the State Fair, the committee, at 11 o'clock A. M.,

On motion of Mr. Gillham,

Rose, reported progress, and asked leave to sit again. Granted.

The desire on the part of the State Board of Health for a conference with the Illinois State Board of Agriculture was announced by Mr. Smith.

On motion of Mr. Ellsworth,

The members of the State Board of Health were introduced, and the President and other members thereof called attention to the limited water supply in a great portion of the State, and of the necessity of having a sanitary survey of the State made, and requesting the cooperation of the State Board of Agriculture in securing legislation for said object.

The Board of Health presented the following communication:

ILLINOIS STATE BOARD OF HEALTH,
SPRINGFIELD, January 12, 1881.

To S. D. Fisher, Esq., Secretary State Board of Agriculture

SIR—I have the honor herewith to transmit the following preamble and resolutions, adopted by this Board, and request that you present the same to the Illinois State Board of Agriculture for consideration and action

WHEREAS, There has arisen in some large sections of this State a temporary, it is hoped, but still alarming, diminution in the water supply, and,

WHEREAS, Much distress is threatened from this cause to the people, and to the domestic animals of the State, and serious dangers to public health; and,

WHEREAS, The remedy against the recurrence of this evil must be sought in a careful inquiry into the various sources of water supply, an inquiry in which the agricultural population is specially interested;

Resolved, That the State Board of Health respectfully ask the concurrence and aid of the State Board of Agriculture in devising such measures as may be necessary to ascertain remedies and to prevent a repetition of the evil.

Resolved, That a committee of three members of this Board be appointed to confer with a committee from the State Board of Agriculture in reference to the extent and cause of the present diminished water supply in sections of this State, and to inquire into, and report upon, the remedies possible against the recurrence of this evil.

The following gentlemen were appointed as a committee from the State Board of Health Drs. Gregory, Chambers and Rauch.

Very respectfully yours,
JOHN H. RAUCH, Secretary.

On motion of Mr. Gillham,

The communication was received and ordered placed on file.

Motion of Mr. Smith carried,

That a committee of three be appointed by the President to cooperate with the committee of the State Board of Health in the matter proposed.

The President appointed as said committee, Messrs. Cobb, Washburn and Judy.

Board resumed the work of the revision of the rules for the Fair in committee of the whole, with Mr. Snoad in the chair.

After the consideration of the rules, the committee, at 1 o'clock,

On motion of Mr. Gillham,
Rose, reported progress, and asked leave to sit again. Granted.

On motion of Mr. Moore,
The Board adjourned to 2 o'clock P. M.

AFTERNOON SESSION.

Board met as per adjournment.

President Scott in the chair.

Present: President Scott, Ex-President Gillham, Vice-Presidents Ellsworth, Emery, Reynolds, Moore, Dysart, Snoad, Cobb, Vittum, David, Beaty, Judy, Smith, Voorhies, Bishop, Pullen, Gore, Washburn and Landrigan.

On motion of Mr. Judy,
The following resolution, introduced by Mr. Gillham, was adopted:

Resolved, That the question of speed at the State Fair of 1881, the rules governing the same, the matter of offering stakes or purses, be referred to a committee of three, to be composed of the Superintendent of Class B, Mr Beaty, Mr Gore and Mr Landrigan, said committee to submit a report for the early consideration of the Board.

The committee on the President's address made the following report, which, on motion of Mr. Landrigan, was adopted:

To the State Board of Agriculture

The committee to whom was referred the President's address, beg leave to report as follows

The general resume of the work of the Board, and the suggestions made with a view to stimulating the Board to make greater exertions in advancing the agricultural and industrial interests of the State, meet our hearty approval.

Co-operation of County Agricultural Boards.

While it is desirable and important that all means should be employed to secure the hearty cooperation of county agricultural boards in the general work of the Board, it is believed that the continued efforts of the Secretary, in correspondence and otherwise, will largely accomplish this desirable result in due time

Biennial Elections.

The committee appreciate the necessity of some modification of the plan for election of members of the Board, but have no well-defined plan to suggest and would therefore recommend that this subject be fully discussed by the Board The majority of the committee are, however of the opinion that elections should be held on Wednesday evening of the week of the fair

Permanent Location of State Fair.

The committee recommend that the President and Secretary prepare a series of questions for the consideration of county agricultural boards and proper county officers in counties having no agricultural organizations, that will enable the next biennial convention, convened for the purpose of electing the State Board of Agriculture, to intelligently determine the sentiment of the general public in reference to the matter of locating the State Fair at one or three points in the State.

Illinois Industrial University.

The question of establishing more intimate relations, officially and otherwise, between this Board and the Illinois Industrial University, is one of great importance, and the committee fully concur with the views presented, and would recommend in order to accomplish this desirable result, that the President be authorized to associate with himself two members of the Board, who shall constitute a standing committee on agricultural and industrial education.

Fat Stock Show.

The committee concur in the views of the President in reference to the management of the Fat Stock Show, and recommend the appointment of the committee suggested, and that it be clothed with the necessary power to perform such duties as the Board may designate.

Diseases of Domestic Animals.

This is a question of vital importance to the farmers of this State, and inasmuch as the Governor has brought this subject prominently before the General Assembly in his message, and as a general effort is now being made throughout this and neighboring States, by petition and otherwise, to secure necessary legislation in Congress, it is recommended that the President and Secretary of this Board be authorized and directed to render all possible assistance in securing the passage of State and National laws that will meet the impending emergency.

The adoption of the following resolutions is recommended:

Resolved, That we recognize the bill introduced into the House of Representatives at its last session, by General Keifer, of Ohio, as embodying the features necessary to an intelligent and efficient supervision of contagious and infectious diseases of live stock generally on the part of the Federal Government, and that we heartily recommend the passage of some such law, with an additional provision which shall clothe the commission with authority to prescribe rules and regulations under which the live stock of any infected State, territory or district may be transported or taken therefrom, and under which live stock may be transported through such infected State, territory or district, or in their discretion to prohibit absolutely the transportation of live stock from or through such infected district, when in their opinion the same shall be essential to the general safety.

Resolved, That we further recommend that petitions be prepared and circulated in all parts of the country, and forwarded to Congress, calling attention to this subject, and urging favorable consideration for the measures proposed in the foregoing resolutions.

Respectfully submitted,

D. B. GILLHAM,
LEWIS ELLSWORTH,
EMORY COBB,
Committee.

Board resumed the work of the revision of the rules in the committee of the whole, with Mr. Snoad in the chair.

After the consideration of the rules and the classification of premiums in Class A—Cattle—the committee, at 7 P. M.,

On motion of Mr. Beaty,

Rose, reported progress, and asked leave to sit again. Granted.

On motion of Mr. Cobb,

A silver medal was awarded C. D. W. Brown, of Aurora, Ill., on a collection of taxidermy exhibited at the late State Fair, on the recommendation of the Committee on Miscellaneous Awards.

On motion of Mr. Gillham,

The Board adjourned to 8 o'clock P. M.

EVENING SESSION.

Board met as per adjournment.

Called to order, in the absence of President and ex-President, by Vice-President Snoad.

Present—Vice-Presidents Ellsworth, Emery, Moore, Dysart, Snoad, Vittum, David, Beaty, Gore and Landrigan.

Mr. Vittum submitted the following recommendations, which were adopted:

To the State Board of Agriculture

I would recommend that silver medals be given as premiums for fleeces in Class C—Sheep—in place of diplomas.

Successful exhibitors can take these medals without inconvenience from fair to fair, and thus advertise their flocks to good advantage.

It is important that sheep exhibited at future fairs be judged according to the recognized standard, and I would recommend that a rule to this effect be printed in the list in conformity to the suggestion of exhibiters of sheep, and the unanimous action of the Illinois Wool Growers' Association.

The sheep breeders of the State, through their association, desire to encourage the improvement of the flocks of the State by offering premiums to be competed for at the State Fair, and ask that they be announced in the premium list—these premiums to consist of a silver cup of $50 value to each of the three recognized breeds; the cups to be awarded by competent committeemen, appointed or endorsed by the State Board, under restrictions recommended by the State Wool Growers' Association.

Respectfully submitted,

D. W. VITTUM, JR.

The Committee on Speed made report, which was received, and,

On motion of Mr. Moore,

Made the special order for discussion for 9 o'clock A. M., to-morrow morning.

Motion of Mr. Vittum carried,

That the President appoint a committee on specifications of requirements for the State Fair for 1881 and 1882.

Mr. Scott in the chair.

The President appointed as said committee,

Messrs. Vittum, Moore and Snoad.

On motion of Mr. Ellsworth,

The Board adjourned to 9 A. M. to-morrow.

THURSDAY, January 13, 1881—9 o'clock A. M.

Board met pursuant to adjournment,

President Scott in the chair.

Present—President Scott, Ex-President Gillham, Vice-Presidents Ellsworth, Emery, Reynolds, Moore, Dysart, Snoad, Cobb, Vittum, David, Beaty, Judy, Smith, Voorhies and Bishop.

Minutes of yesterday's sessions were read, and,

On motion of Mr. Judy,

Adopted.

The report of the Committee on Specifications of Requirements for the Fairs of 1881 and 1882, was received, and,

On motion of Mr. Judy,

Adopted, as follows:

REPORT OF COMMITTEE ON SPECIFICATIONS OF REQUIREMENTS FOR FAIRS OF 1881-82.

To the State Board of Agriculture

The committee to whom was referred the specifications of requirements for the fairs of 1881 and 1882 beg leave to submit the following report

ILLINOIS STATE FAIR.

Specifications of the Requirements made by the Illinois State Board of Agriculture, of localities bidding for the State Fairs of 1881 *and* 1882.

1. There shall be furnished not less than forty (40) acres of suitable ground, enclosed with a substantial fence, not less than seven (7) feet high, with necessary gates for foot passengers and vehicles at convenient points, to be located at the discretion of the State Board of Agriculture.

2. Twenty-five hundred (2500) linear feet of stalls for cattle; size six (6) feet in width by eight (8) feet long, with twelve (12) foot roof, partitions four (4) feet high, and to be tight.

3. Twenty-five hundred (2500) linear feet of stalls for horses, substantially built, with tight partitions, eight (8) feet high, well roofed, and to be six (6) feet in width by twelve (12) feet long, said cattle and horse stalls to be furnished with suitable feed trough, manger and fixtures for tying stock

4 Every tenth cattle and horse stall to be closed with a door at the end, properly hung and provided with hasp and staple Stalls thus finished need not be provided with troughs and mangers All to be whitewashed on the face surface, and consecutively numbered with figures at least six (6) inches in length

5 Four hundred (400) pens for hogs, six (6) by eight (8) feet each, to be substantially built, properly floored and tightly roofed, not less than six (6) feet from the ground at the eaves, and nine (9) feet high in front, each pen to be provided with feed trough, and a door with suitable fastenings All to be consecutively numbered with figures not less than four (4) inches in length

6 Three hundred (300) pens for sheep, six by eight (6x8) feet, tightly roofed and each provided with feed trough and rack and a door with suitable fastenings All to be consecutively numbered with figures not less than four (4) inches in length Pens to be six (6) feet at the eaves and nine (9) feet in front.

7. Two Exhibition Halls, to be built in the shape of a Greek cross and each covering a space of not less than nine thousand six hundred (9 600) superficial feet, to be floored, tightly roofed, and properly lighted by glazed windows with suitable doors, and a flag-staff and flag on each

8 A poultry shed not less than forty by one hundred (40x100) feet, ten (10) feet high at the sides, to be provided with suitable tables

9 A floored building for general headquarters, thirty by thirty (30x30) feet, two stories high, provided with flag-staff and flag, with four one-story wings or shed-rooms sixteen by thirty (16x30) feet, making the building in the shape of a Greek cross, one wing sixteen by thirty (16x30) feet to be partitioned off from the inner court for the offices of President and Secretary, the other wing sixteen by thirty (16x30) feet, to be partitioned off the court for the office of the General Superintendent, one end sixteen by thirty (16x30) feet, to be partitioned off from the court for the Auditing Committee, the other end, sixteen by thirty (16x30) feet to be partitioned off from the court for clerks of the Secretary, the several offices to be provided with the necessary tables and chairs, the partitions dividing the offices and open court to be not less than seven (7) feet high with doors opening from each office to the court—all doors to have suitable locks and fastenings

The several offices to be designated by suitable signs inside and outside the building, and to be properly lighted with four windows to each wing—windows to have double sash-lights ten by sixteen (10x16) inches six (6) lights in each sash

10 A Treasurer's office twelve by thirty (1?x30) feet, floored with six sliding windows and shelves suitable for selling tickets, the door to be provided with lock and key

11 A Business Office for superintendents of sheep and swine, sixteen by thirty-two (16x32) feet floored and tightly roofed and glazed, with partitions in the center, and lettered as above

12 A suitable hall for the accommodation of the press and committee men, not less than sixteen by thirty-two (16x32) feet, with partition in center, floored and glazed, and provided with table and chairs

13 A carriage shed thirty by eighty (30x80) feet, and nine (9) feet high at the sides and floored

14 Ladies' drawing room not less than twenty by thirty (20x30) feet, furnished with chairs tables and accommodations for washing and water-closet five by twenty-four (5x21) feet, with yard not less than thirty (30) feet square adjoining enclosed with a tight board fence not less than seven (7) feet high

15 Amphitheatre adjoining the track and show ring to be well roofed, and so arranged as to comfortably seat five thousand (5 000) persons at one time Said amphitheatre to be finished with booths underneath of sufficient size for the transaction of business

16. Judge's stand two stories high to be furnished with flagstaff flag and fixtures

17 Granary twelve by sixteen (12x16) feet

18 Five privies five by sixteen (5x16) feet, each with suitable yard in front, seven (7) feet wide, with gateway five (5) feet wide with a blind not less than seven (7) feet high by fourteen (14) feet long

19 A driving track to be properly graded and kept in order during the fairs fifty feet wide, and not to exceed one-half mile in circuit and not less than one fourth of a mile in circuit on the inside line enclosed with substantial railing Also a show ring around the Judge's stand four hundred (400) feet in diameter properly graded and guarded by railing

20 An abundant supply of good water, suitable for persons and stock at ten (10) convenient points on the grounds

21 Sixty (60) tons of straw each year—1881 1882—or as much thereof as may be required for bedding stock on exhibition and other purposes to be distributed under the direction of the superintendent of forage and stalls

22 Suitable facilities [that is to say steam railway communication between the fair grounds and regular railway lines reaching the city of ——] ample for the accommodation of exhibiters and visitors and for the transportation of stock and articles for exhibition, which is to be afforded at reasonable and customary market rates

23 A written guaranty from the hotels and principal boarding houses that they will not charge for the accommodation of visitors and exhibiters more than their customary rates

24 In determining the location of the fair, the facilities extended by the railroads will be considered, which must be in writing, over the signatures of the proper officers of the several railroads, giving the rates that will be charged for the transportation of passengers and freight to and from the fair

25 Suitable drainage of the grounds

26 Additional space outside the enclosure for camping grounds, with a sufficient water supply if, in the opinion of the committee of arrangements, the same may be necessary for the accommodation of the public, will also be considered in deciding the location.

27 All the foregoing specifications and requirements to be complied with, all structures to be completed, freshly whitewashed, and fixtures and furniture in place and ready for

occupancy by or before the first day of September in 1881 and 1882; and possession of the grounds and accommodations, as hereinbefore provided, to be delivered to the committee of arrangements at the times stated, free of any cost or expense whatever to the State Board of Agriculture—and with the express understanding that in the event of loss or damage to any of the buildings, stalls, pens or fixtures hereinbefore required, at any time up to the close of the fair in 1882, from any cause whatever, the same shall be made good without expense to the State Board of Agriculture. All buildings and accommodations above specified to be located by the committee of arrangements of the State Board of Agriculture.

28. While it is understood and expected that the State Board of Agriculture will use ordinary diligence to take care of said grounds and property during the period said Board may be in possession of the same, as contemplated by the foregoing specifications, yet it is hereby expressly understood and made one of the conditions of these specifications and this contract, that neither the said Board nor any of its members, officers or agents, individually, shall, in any event whatever, be held responsible or liable for any loss or damage which may occur to said property from any cause whatever during said periods in which said Board may be in fact or constructively in possession of the same.

29. A good and sufficient bond of not less than ten thousand dollars ($10,000), duly executed, will be required at time of considering proposals, that all the foregoing specifications and requirements will be complied with.

30. The point securing the location of the fair for 1881 and 1882 having buildings on their grounds suitable for any of the above requirements, will be received, if, in the opinion of the committee of arrangements, they can be used.

Written proposals, in due form, will be considered by the Board, at the rooms of the Department of Agriculture, at Springfield, on the 3d Tuesday in February (15th), 1881.

Respectfully submitted,

D. W. VITTUM, Jr.,
J. L. MOORE,
C. SNOAD,
Committee.

The special order being the consideration of the report of the Committee on Speed programme, and coming up,

Mr. Reynolds moved the adoption of the report.

Mr. Washburn moved to amend by striking out the purse for running race.

Mr. Pullen moved to amend by striking out the three last purses recommended by the committee. Adopted.

Motion of Mr. Reynolds, as amended, was lost.

On motion of Mr. Moore,

The Board adjourned to 2 o'clock P. M.

AFTERNOON SESSION.

Board met pursuant to adjournment.

President Scott in the chair.

Present: President Scott, Ex-President Gillham, Vice-Presidents Ellsworth, Emery, Moore, Dysart, Snoad, Cobb, Vittum, David, Beaty, Judy, Smith, Voorhies, Bishop, Pullen, Gore, Washburn and Landrigan.

Board resumed the work of the revision of the premium list in speed, Classes F Section 2, and K, with Mr. Landrigan in the chair.

After the completion of the work of revising the premium list for the Fair of 1881, the committee, at 3 o'clock,

On motion of Mr. Smith,

Rose and recommended the adoption of the classification of premiums reported by the committee of the whole.

Mr. Smith moved as an amendment that the sweepstakes premium on roadster stallion be reduced to $50.

Mr. Landrigan moved as a substitute that $100 be offered in each of the six classes of horses as a sweepstakes premium for stallions. Carried.

Mr. Smith moved to amend by striking out the lot for horses of all work. Carried.

Mr. Judy moved to strike out, in the heading of the lot for agricultural horses, the words "grades of draft stallions." Carried.

Motion of Mr. Snoad carried,

That the report of the committee of the whole on the revision of the premium list, as amended, be adopted.

The committee on the President's address made the following special report in reference to the recommendations concerning complimentaries:

To the State Board of Agriculture:

In reference to the recommendation of the President concerning the distribution of complimentary tickets, the committee heartily agree with the views of the President as to the necessity of establishing a precedent based on sound business principles, and the adoption of a rule that will confine such considerations to persons that contribute to the success of the State Fair, or parties whose official position entitle them to such courtesies.

The diversity of opinions entertained by members of the Board on this subject prompt the committee to recommend that the question be fully discussed by the Board, and then, if it is deemed advisable, an inflexible rule will be recommended by the committee.

Respectfully submitted,

D. B. GILLHAM,
E. COBB,
LEWIS ELLSWORTH,
Committee.

Motion of Mr. Judy carried,

That the report be received and placed on file.

The Finance Committee made the following report of the result of conference with the sureties on the bond given by the citizens of Springfield for the fulfillment of the specifications of requirements for the State Fair:

REPORT OF COMMITTEE ON SPRINGFIELD BOND.

To the State Board of Agriculture:

Your committee would beg leave to report that they have had a conference with the sureties on the Springfield bond, who claim that all the specifications have been complied with, excepting the item of $800 for steam power.

The committee would ask for further time, and will make final report at the February meeting of the Board.

EMORY COBB,
W. M. SMITH,
Committee.

On motion of Mr. Beaty,

The report was received and placed on file.

Mr. Gillham, chairman of the committee appointed to consider the communication of the Woodstock Society, asked for further time in order to obtain the opinion of the Attorney-General on points of law involved.

On motion of Mr. Landrigan,

The request was granted.

President nominated superintendents and standing committees as follows, for 1881 and 1882:

SUPERINTENDENTS OF DEPARTMENTS.

Class A—Cattle	Mr. Smith
Class B—Horses	Mr. Beaty
Class C—Sheep	Mr. David
Class D—Swine	Mr. Gore
Class E—Poultry	Mr. Emery
Class F—Mechanics	Inside of Hall, Mr. Voorhies
	Outside of Hall, Mr. Pullen
Class G—Farm Products	Mr. Washburn
Class H—Horticulture	Mr. Haskell
Class I—Fine Arts	Mr. Reynolds
Class K—Textile Fabrics	Mr. Bishop
Class L—Natural History	Mr. Reynolds
Class N—Education	Mr. Cobb

Marshal of the Ring—Mr. Judy.

General Superintendent—Mr. Vittum.

Superintendent of Forage and Stalls—Mr. Moore.

Superintendent of Press Department—Mr. Ellsworth.

Reception Committee—Messrs. Scott, Reynolds, Gillham, Ellsworth, and Cobb.

Auditing Committee—Messrs. Snoad, Dysart and Landrigan.

Committee of Arrangements—Messrs. Scott, Gillham, Ellsworth, Vittum, Cobb, Dysart, Smith, Pullen, Landrigan, Beaty, Haskell and Moore.

Committee on Printing—Messrs. Scott, Reynolds, Moore and Fisher.

Committee on Finance—Messrs. Cobb, Vittum, Beaty and Smith.

Committee on Crop Reports—Messrs. Scott, Gillham and Fisher.

Committee on Agricultural and Industrial Education—Messrs. Scott, Gillham and Reynolds.

Committee on Museum—Messrs. Scott, Gillham, Reynolds and Fisher.

Committee on Library—Messrs. Emery, Haskell and Fisher.

Committee on Transportation—Messrs. Scott, Gillham, Cobb, Vittum, Smith and Fisher.

Committee on Fat Stock Show—Messrs. Scott, Gillham, Cobb, Smith, Vittum, Dysart and Moore.

Jury on Pedigrees—

Class A—Messrs. Smith, Dysart and Cobb.

Class B—Messrs. Beaty, Landrigan and Voorhies.

On motion of Mr. Cobb,

The nominations were confirmed.

Motion of Mr. Gillham carried,

That Monday, September 26, be appointed as the day for opening the State Fair for 1881.

On motion of Mr. Gillham,

The Secretary was instructed to prepare lists in blank, showing committeemen due each district, as well as the lot in which each judge is to serve.

Motion of Mr. Snoad carried,

That fifty complimentaries for the next State Fair be issued to each member of the Board, and a sufficient number to the President.

President announced following committees:

Agricultural and Industrial Education—Messrs. Scott, Gillham and Reynolds.

Fat Stock Show—Messrs. Scott, Gillham, Smith, Cobb, Vittum, Dysart and Moore.

Appropriations—Messrs. Smith, Cobb and Fisher.

Mr. Judy in the chair.

Motion Mr. Smith carried,

That speed be added to the requirements at the head of the lots for thoroughbred and roadster horses, and that $500 in speed premiums be added to the class for horses, the amount to be apportioned by the Superintendent.

Minutes of the sessions held during the day read and adopted.

On motion of Mr. Gillham,

The Board adjourned, to meet February 15, 1881, at the rooms of the Department of Agriculture, Springfield.

ROOMS OF THE DEPARTMENT OF AGRICULTURE,
SPRINGFIELD, Tuesday, February 15, 1881,
10 o'clock A. M.

Board met as per adjournment.

President Scott in the chair.

Present: President Scott, Ex-President Gillham, Vice-Presidents, Emery, Reynolds, Haskell, Moore, Snoad, Cobb, Vittum, David, Beaty, Judy, Pullen, Gore and Landrigan.

Committee on appropriations made the following report, which,

On motion of Mr. Snoad,

Was received and adopted:

REPORT OF COMMITTEE ON APPROPRIATIONS.

To the State Board of Agriculture:

Your committee on appropriations for the years 1881 and 1882 would beg leave to report that a bill was prepared and has been introduced into the Senate and House, calling for amounts as follows, which your committee recommend be paid as specified below for the years 1881 and 1882

For premiums Illinois State Fair	$3,000 00
For annual salary of Secretary	2,500 00
For annual salary of Assistant Secretary	1,500 00
For annual salary of Curator	600 00
For annual salary of porter	600 00
For museum	500 00
For expenses collecting and publishing crop statistics	1,000 00
For books, maps charts, etc	500 00
For office expenses, postage, express, repairs, etc	1,000 00
Total	$11,200 00

The committee also asked for $100 for each County Agricultural Board holding fairs, making reports, and otherwise complying with the requirements of law.

The bill calls for an increase of $500 per year over the amount received by the Board from the State during the past two years.

JAS. R. SCOTT,
D. B. GILLHAM,
EMORY COBB.

On motion of Mr. Judy,

The following report was received and adopted:

To the State Board of Agriculture:

Your committee to whom was referred the communication from the Agricultural Society at Woodstock, McHenry county, beg leave to report as follows

The communication sets forth that said Society did, on the 24th day of February, A. D. 1872, accept of the provisions of the act of 1871 in relation to the organization of County Agricultural Boards, and since that time until the past year has been recognized by the State Board of Agriculture as the McHenry County Agricultural Board, and annually received the State appropriation.

The Society claims that it is entitled to the appropriation for 1880, which has been withheld by the Secretary of the State Board of Agriculture on the grounds that the Agricultural Society located at Marengo, in said county, is entitled to share in the State appropriation in such manner as may be agreed upon by the societies in the county, when organized as branches respectively of the County Agricultural Board as required by law. The Woodstock Society declines to recognize the application that has been made by the Marengo Society to form such County Agricultural Board by representatives appointed by the two societies, as provided by the by-law XIV of the State Board of Agriculture, to apply in counties where two or more agricultural organizations exist.

The equity of the law in placing all the societies upon an equal footing as regards representation and participation in the State appropriation, cannot, in the opinion of your committee, be questioned.

The report of the Marengo Society, made to the State Board of Agriculture in 1879, shows said Society to be entitled to recognition as a branch of the County Board, and the correspondence indicates its readiness to appoint representatives to meet the representatives of the Woodstock Society to complete the organization of the McHenry County Agricultural Board.

The law provides that the State appropriation shall be paid by the Treasurer of the State Board of Agriculture to the proper officers of the subordinate District or County Agricultural Board the sum received for its use and benefit, and it seems clear to your committee that no money can be drawn for the benefit of a County Board until such Board is properly organized as required by law.

The committee presented the question and points of law involved in the case to the Attorney-General, and his opinion, submitted herewith, sustains the rulings of the Department.

Respectfully submitted,

D. B. GILLHAM,
D. W. VITTUM, JR.
Committee.

ATTORNEY-GENERAL'S OFFICE,
SPRINGFIELD, ILL., January 28, 1881.

Hon. S. D. Fisher, Sec. State Board of Agriculture

DEAR SIR—Your favor of yesterday received, in which you inquire as to the effect of amendatory act of 1879, Laws of 1879, page 1, upon counties having two or more societies holding fairs and paying three hundred dollars in premiums, etc.

I think, if a county has an Agricultural Board, under this section of the law the money appropriated must be paid to that Board Every Agricultural Society in the county holding annual fairs and paying three hundred dollars in premiums has a right to be represented in that Board and share in the money appropriated.

If a Society, holding fairs and paying three hundred dollars in premiums, is refused admission to representation in the Board, such Board would not be the Agricultural Board provided for by the statute, and would have no right to the money appropriated nor to delegates to the State Fair, until it complied with the law by admitting its sister society to representation in it.

The Society refused admission to the County Board could compel such admission by applying to the courts for a mandamus, if it had complied with the law by holding fairs and paying premiums.

Very respectfully yours,
JAMES McCARTNEY,
Attorney-General.

On motion of Mr. Landrigan,

Mr. Perkins, of the Randolph County Agricultural Society, was allowed to present the matter of re-organization of the Randolph County Agricultural Board, to be composed of the Chester Agricultural Society and the Sparta Society.

Mr. Perkins made a statement of his case, and asked that the usual appropriation be paid to the Society having its office at Sparta.

On motion of Mr. Landrigan,

The question of appropriation and recognition of the Randolph County Agricultural Board was referred to a committee of three, to be appointed by the President.

President appointed, as said committee,

Messrs. Washburn, Cobb and Gillham.

On motion of Mr. Gillham,

The following resolution, introduced by Mr. Reynolds, was adopted:

Resolved, That the Illinois State Board of Agriculture recognizes the great importance of having the agricultural and industrial products and resources of the State creditably represented at the International Exhibition to be held in the city of New York in 1883.

Resolved, That the General Assembly now in session be requested to make an appropriation for this purpose.

Resolved, That the Illinois State Board of Agriculture will render all possible assistance to the Illinois Commission having in charge the interests and exhibits of the citizens of this State, to the end that our vast resources and industries may be advertised to the best advantage with the various nations which may be represented at said World's Fair.

John W. Bunn, Treasurer, presented his bond, which was,

On motion of Mr. Moore,

Referred to the Finance Committee.

Motion of Mr. Gillham carried,

That 2 o'clock P. M. be appointed as the hour for receiving proposals for locating the State Fair for the years 1881 and 1882.

Motion of Mr. Cobb carried,

That the vote on the question to increase the price of admission to exhibiters be reconsidered.

The original motion was then put and lost.

Motion of Mr. Beaty carried,

That a committee with the President as Chairman be raised, to revise or amend existing laws relating to the Department of Agriculture, or frame a new bill, the recommendation to be submitted for the consideration of the Board, at as early date as may be practicable.

President appointed, as associate members of said committee,

Messrs. Beaty, Reynolds and Haskell.

Motion of Mr. Moore carried,

That $1,000 be appropriated for the encouragement of the development of the qualities of running and trotting horses, instead of $500 heretofore appropriated for the same purpose, the distribution and amounts to several ages, and other matters in connection with the speed department, to be referred to the President and Superintendent of the class, with power to act.

On motion of Mr. Cobb,

The Board adjourned to 2 o'clock P. M.

AFTERNOON SESSION.

Board met as per adjournment.

President Scott in the chair.

Present—President Scott, Ex-President Gillham, Vice-Presidents Emery, Reynolds, Haskell, Moore, Snoad, Cobb, Vittum, David, Beaty, Judy, Pullen, Gore and Landrigan.

On motion of Mr. Gillham,

The following resolutions, introduced by Mr. Haskell, were adopted:

Resolved, That the Illinois State Board of Agriculture commend to the favorable consideration of the President of the United States the name of Hon. Emery Cobb, of this State, for appointment as Commissioner of Agriculture

Resolved, That the well known executive ability, organizing talent, business training, and thorough identification with the interests of agriculture, preeminently fit him to fill the office most acceptably to the various industries of the Nation.

Resolved, That the prominent positions that Mr. Cobb has occupied in this State for many years as a practical and successful farmer and live-stock breeder, and his faithful and efficient service in the various organizations calculated to develop the agricultural resources of the State, entitle him to the highest endorsement of the Illinois State Board of Agriculture.

Resolved, That the President and Secretary of this Board inform the State Boards of Agriculture of other States of this action, and request their cooperation in this matter, and further, to use all honorable means to secure the appointment of Mr. Cobb to the position named.

The special order being the receiving of proposals for locating the State Fair for the years 1881 and 1882, and coming up,

On motion of Mr. Gillham,

Localities desiring to have the Fair were given an opportunity of presenting proposals.

The specifications of requirements were read.

The following communication was presented by the Peoria committee, and the advantages and claims of the city were advocated by R. H. Whiting, J. S. Starr and others:

OFFICE PEORIA FAIR ASSOCIATION,
PEORIA, ILL., February 12, 1881.

To the Honorable State Board of Agriculture, Springfield, Illinois:

The Peoria Fair Association respectfully apply for the location of the State Fair for the years 1881 and 1882, at the grounds used for the State Fairs of 1873 and 1874.

The directors of this Association have voted unanimously to offer you the use of the grounds, buildings, etc and to comply with your requirements in fitting up for the Fairs.

Very respectfully,

N. BURNHAM, President
ROSWELL BILLS, Secretary.

BOND.

Know all men by these presents That we, Nelson Burnham, R. H Whiting, Charles P. King, H. R. Woodward, M Heneburg, Valentine Jobst Roswell Bills, John C. Proctor, Max Newman, of the county of Peoria, and State of Illinois, are held and firmly bound unto the Illinois State Agricultural Board in the penal sum of ten thousand dollars lawful money of the United States, to be paid unto the said Illinois State Agricultural Board, for the payment of which sum well and truly to be made we bind ourselves, our and each of our heirs, executors and administrators jointly and severally by these presents.

Signed, sealed and delivered this 9th day of February, A. D. 1881

WHEREAS, The Illinois State Agricultural Board proposes to hold their next annual Fairs for the years 1881 and 1882 at the City of Peoria, in the county and State aforesaid, on the grounds owned by the Peoria Fair Association, and known as Jefferson Park;

Now, therefore, The condition of this obligation is such that if the above bounden Nelson Burnham, R. H. Whiting, Charles P. King, H R. Woodward, M. Heneburg, Valentine Jobst, Roswell Bills, John C. Proctor and Max Newman, shall faithfully do and perform, or cause to be done and performed, all and singular the requirements and specifications as set forth in the schedule hereunto annexed, marked *"Schedule A," and shall save and keep harmless, and shall indemnify, the said State Board from, for and on account of all charges or damages growing out of a failure to perform the same, then this obligation to be void, otherwise to remain in full force and effect.

N. BURNHAM.
R. H WHITING.
CHARLES P. KING.
H. R. WOODWARD.
M. HENEBURG.
VALENTINE JOBST.
ROSWELL BILLS.
JOHN C. PROCTOR.
MAX NEWMAN.

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*Printed specification of requirements published by the Illinois State Board of Agriculture.

On motion of Mr. Beaty,

The Board went into executive session to consider the question of location.

On motion of Mr. Vittum,

The proposition of the citizens of Peoria was accepted.

Motion of Mr. Gillham adopted,

That the President and Secretary prepare a blank, submitting the question of permanent location of State Fair at one or three points, fix date for canvassing this question, and electing delegates to the convention to be held during the State Fair of 1882 for the purpose of electing members of the Illinois State Board of Agriculture.

On motion of Mr. Gilham,

The following report was received and adopted:

REPORT OF COMMITTEE ON FAT STOCK SHOW.

To the State Board of Agriculture:

Your committee to whom was referred the matter of holding a Fat Stock Show would beg leave to report that the Directors of the Exposition Company of Chicago have tendered the Illinois State Board of Agriculture the use of the Exposition building for the Fat Stock Show, on the same terms as last year.

Hon. J. B. Sherman, Superintendent of the Union Stock Yards and Transit Company, subscribed $2,000, and agreed to secure subscriptions from the stock commission merchants, at the Union Stock Yards, amounting to at least $1,000

The leading business men of Chicago express a lively interest in the continuance of these shows, and give assurance that funds will be provided for increasing the premiums, and relieving the Board of any anxiety as to a deficiency.

Your committee would therefore recommend that the Board proceed to complete arrangements for holding a Fat Stock Show the coming fall.

Respectfully submitted,

JAS. R SCOTT,
J L. MOORE,
EMORY COBB,
Committee.

On motion of Mr. Gillham,

The matter of fixing date for holding the next Fat Stock Show, and completing arrangements therefor, was left to the Committee on Fat Stock Show, with power to act.

On motion of Mr. Cobb,

The Committee on Legislation were authorized to incorporate in their recommendations any new features in keeping with the work of a well organized and progressive Board of Agriculture.

The following preamble and resolution, introduced by Mr. Gillham, were adopted:

WHEREAS, The rapid growth of the Illinois State Fair has rendered necessary the enlargement, from time to time, of the number of the police force; and

WHEREAS, The designation of ribbon heretofore used for policemen is frequently used by designing parties, and has been the cause of much abuse, therefore, be it

Resolved, That the Secretary be instructed to procure not less than one hundred metal badges, suitably inscribed with the Board monogram.

On motion of Mr. Haskell,

The following report was adopted:

REPORT OF THE COMMITTEE ON TREASURER'S BOND.

To the State Board of Agriculture:

Your committee to whom was referred the bond of the Treasurer would respectfully report that they have carefully examined the financial standing of the sureties, and consider the bond good and sufficient for the amount named.

We would recommend its acceptance, and that the bond be filed with the Secretary.

EMORY COBB,
Chairman.

On motion of Mr. Moore,

The Board adjourned, subject to the call of the President.

JAMES R. SCOTT,
President.

S. D. FISHER,
Secretary.

MEETINGS DURING THE FAIR.

THE INGERSOLL, PEORIA, ILL.
MONDAY, September 26, 1881—8 o'clock A. M.

Board met in special session.

President Scott being absent, Vice-President Smith was called to the chair.

Present—Ex-President Gillham, Vice-Presidents Emery, Haskell, Moore, Snoad, David, Beaty, Smith, Pullen, Gore, Washburn and Landrigan.

Ex-President Gillham introduced the following resolutions, which were generally discussed by the members of the Board, who paid fitting tribute to the high character and eminent services of the deceased:

In Memoriam.

WHEREAS, Through the rulings of an Allwise Providence, the country has been deprived of its chosen Chief Executive, President JAMES A. GARFIELD; therefore, be it

RESOLVED, That in the death of JAMES A. GARFIELD the industrial classes have been deprived of the able services of a faithful champion whose devotion to the best interests of all classes has never been questioned.

RESOLVED, That the ILLINOIS STATE BOARD OF AGRICULTURE unites with all patriotic citizens in deploring the atrocious crime that has so grievously afflicted the Nation at a time of unparalleled prosperity.

RESOLVED, That the example as well as the recognition of the sterling qualities of head and heart that advanced the deceased from the honorable and humble position of a plow-boy to the highest office in the gift of a great and powerful Nation, should stimulate the youth of our land to aspire to attain the qualifications that made the late JAMES A. GARFIELD so conspicuous and prominent as a representative American citizen.

RESOLVED, That the heartfelt sympathy of the members of the Board be assured the family of the deceased in their great bereavement.

RESOLVED, That the entrance gates, headquarters buildings and exhibition halls of the Fair Grounds be draped in mourning, and that the programme of exercises, so far as possible, be suspended during the day which has been set apart for the holding of services expressive of the Nation's great loss.

RESOLVED, That the foregoing resolutions be spread upon the journal of the Board, and a copy sent to the family of the deceased.

On motion of Mr. Pullen,

The Board adjourned to meet on call of the President.

THE INGERSOLL, PEORIA, ILL.

MONDAY, September 26, 1881—8 o'clock P. M.

Board met in special session.

Ex-President Gillham in the chair.

Present—Ex-President Gillham, Vice-Presidents Emery, Moore, Snoad, Vittum, Beaty, Judy, Smith, Voorhies, Pullen, Gore and Washburn.

Superintendent Smith, of Class A, presented the following informal protest of W. A. Pratt, of Elgin, Ill.:

PEORIA, ILLINOIS, September 26, 1881.

To the Hon. State Board of Agriculture of Illinois:

The undersigned, a breeder of Holstein cattle, and exhibiting at this Fair, has been informed that a herd of Dutch Friesian cattle, belonging to Langworthy & Co., are entered to compete as Holsteins at the Illinois State Fair.

As this herd is not registered in the Holstein Herd Book, or even called Holsteins, I protest against this herd being allowed to compete in the classes for thoroughbred Holsteins.

W. A. PRATT.

On motion of Mr. Voorhies,

The protest was referred to a special committee of three, to be appointed by the chair.

The chair appointed as said committee,

Messrs. Smith, Voorhies and Moore.

Motion of Mr. Moore carried,

That the President, with any member of the Board and the Superintendent of either Class A—Cattle, or B—Horses, be authorized to fill any vacancies that may occur in the regularly appointed committees for the classes named.

The following report was received, and adopted on motion of Mr. Beaty:

To the State Board of Agriculture

The undersigned have duly considered the informal protest against the eligibility of the Holstein or Dutch Friesian cattle entered for exhibition by the Unadilla Valley Stock Breeders' Association, of West Edmeston, N. Y.

The committee find that the above named exhibiter has entered the cattle in question as Holsteins, that the purity of breeding or superior quality of the cattle imported or bred by this association has never been questioned by parties who have taken the trouble to inform themselves, and that the herd has been extensively advertised throughout the country as "Dutch Friesians, popularly called Holsteins"; further, that the American Holstein Association, at their annual meeting, voted to receive all the animals recorded in the Dutch Friesian Herd Book, including the Unadilla herd.

The majority of the animals composing the herd in question are imported, and are all recorded in the Dutch Friesian Herd Book, published at Utica N. Y., by the American association of breeders of thoroughbred Dutch or Friesian cattle by which name the better class of imported cattle commonly called "Holstein" in this country are known by their breeders in Europe.

Your committee are of the opinion that the spirit which prompted the protest resulted from sympathy with certain parties engaged in a herd book controversy, a matter that does not concern the Board.

No evidence having been furnished that the cattle are not purely bred as claimed, your committee would respectfully recommend that the informal protest of Mr. Pratt be declared not sustained. Respectfully submitted.

W. M. SMITH,
D. W VOORHIES,
J. L. MOORE.
} Committee.

Mr. Gore, Superintendent of Class D—Swine—presented the following petition from exhibiters of Berkshire swine:

To the State Board of Agriculture

The undersigned, exhibiters of Berkshire swine at the Illinois State FAIR of 1880, would respectfully request that this breed of swine be judged at all future shows by the recognized standard adopted by the American, Canadian and English breeders of Berkshire swine, and that the announcement be published in the Premium List.

ALEX. M FULFORD, Bel Air, Md.
W. C. NORTON Aldenville, Penn.
A. A. McARTHUR, Lobo, Ont., Canada.
A. & J. DORSEY, Perry, Ill
C. LETTON, Jacksonville, Ill.
A. J. LOVEJOY, Jacksonville, Ill.

On motion of Mr. Washburn,

The consideration of the petition was postponed until the January meeting of the Board.

On motion of Mr. Moore,

The Board adjourned subject to the call of the President.

THE INGERSOLL, PEORIA, ILL.

WEDNESDAY, September 28, 1881—8 o'clock P. M.

Board met in special session on the call of the President.

Present—President Scott, ex-President Gillham, Vice-Presidents Reynolds, Haskell, Moore, Snoad, Cobb, Vittum, David, Beaty, Judy, Smith, Voorhies, Bishop, Pullen, Gore, Washburn and Landrigan.

Mr. Beaty, Superintendent Class B—Horses—presented the following complaint:

PEORIA, ILLINOIS, September 28, 1881.

To the State Board of Agriculture:

Having shown two horses in Lot 32, as a draft team, and having been refused the right to show the horses single in Lot 33, horses for agricultural purposes, I ask a hearing from the Board.

I want, too, if I will be allowed the privilege, to show the horses singly in Lot 34, sweepstakes, horses for agricultural purposes.

W. H. ROSS.

Mr. Beaty, Superintendent Class B—Horses—explained his ruling in the case of the complainant.

On motion of Mr. Moore,

The action of Superintendent Beaty was approved.

The following communication from the New York Merino Sheep Breeders' Association was read:

AVON, NEW YORK, August 12, 1881.

Secretary State Board of Agriculture, State of Illinois:

MY DEAR SIR—At a meeting of our merino sheep breeders, during our spring sheep show, it was decided that a pen of fat merino wethers ought to be shown at the Chicago Fat Stock Show, in November next. Accordingly, ten sheep were purchased and placed in preparation for that exhibition.

They were numbered, and their fleeces carefully preserved, with a view of having them compete for the most profitable mutton—taking into consideration the value of the pelt, etc.

We find that the regulations of the show provide that no sheep older than three years are eligible for competition, and our sheep are all over that age.

We desire, if consistent with the views of your Board, that a class shall be made which will admit sheep of three years and over.

Merinos are a much longer lived sheep than the long wool classes. The wethers are rarely fed before three years of age, and oftener at four years and upwards, when they are regarded as the most profitable wool producers.

I believe it greatly in the interest of the merino sheep breeders of the country that an opportunity should be given them to compete, under favorable circumstances, as mutton sheep.

Hence, I ask your favorable consideration of the above request, as, without a modification of your regulations, we cannot carry out our plan of showing these sheep.

Please reply at your earliest convenience, and oblige,

Yours very truly,

W. G. MARKHAM,
Pres. N. Y. Merino Sheep Breeders' Ass'n.

On motion of Mr. Landrigan,

The Secretary was instructed to inform the President of the New York Merino Sheep Breeders' Association that the Illinois State

Board of Agriculture would give a special premium of $50 for a creditable display of ten merino wethers over three years of age, to be exhibited at the forthcoming Fat Stock Show.

Superintendent Pullen—Class F, Mechanics—presented petition of the exhibiters of traction and portable engines, asking the privilege of showing their engines in front of the amphitheatre, at such time as the Board might designate.

On motion of Mr. Cobb,

Action thereon was postponed until to-morrow evening, owing to the muddy condition of the track.

The following communication from the Western Poultry Club was read:

To the State Board of Agriculture.

The Western Poultry Club desires space in the Exposition Building during the week of the next Fat Stock Show, for an exhibition of poultry.

The Poultry Club will pay their own premiums and expenses, provide exhibition coops at the rate of fifty cents for each fowl. The State Board of Agriculture to have all door receipts, and provide exhibiters of poultry with free admission tickets during the week of the Show.

J. B. FOOT.

On motion of Mr. Snoad,

The proposition of the Western Poultry Club was accepted.

The following communication from the National Department of Agriculture was read:

DEPARTMENT OF AGRICULTURE, WASHINGTON, D. C., July 26, 1881.

SIR—It is my purpose to call together in convention, to be held in this department during the coming winter, such representatives of the various branches of agriculture in this country as the leading agricultural associations may select as their delegates.

I wish to meet those who are interested in, and skilled in, the breeding, feeding and sale of cattle; those interested in, and skilled in, the production of the cereal crops of the country; those interested in, and skilled in, grape culture and the manufacture of wines; those having charge of the agricultural colleges, agricultural societies, and the educational agricultural institutions of the country—for the purpose of discussing the general welfare of agriculture and the various divisions of the industry to which I have alluded. I shall feel under obligations to your association, if, at any meeting held this autumn, it will choose delegates to these conventions who are qualified to take part in the proposed deliberations.

The first of these series of conventions will be held on January 10, and will be devoted to the colleges and agricultural societies, for the discussion of the general principles of farming, and of those questions which belong to agricultural education and the organization of schools, colleges and associations, and will continue two days.

The second of the series will meet on the 12th day of January, and will be devoted to the discussion of the animal industries of the country, and the various modes of breeding, feeding and dealing in cattle, horses, sheep and swine. This convention will continue two days.

The third of the series will be devoted to a discussion of all matters relating to the cereal crops, and will commence on the 14th day of January and continue two days.

The fourth of the series will commence on the 17th day of January, and will be devoted to the discussion of the management of vineyards and the manufacture of wines, and will continue two days.

I would request your association to choose delegates to as many of these conventions as are of interest to your section of the country, and as will find representatives within the limits of your society.

Each convention will be composed of three delegates from each of the societies and colleges invited to be present—that is, three delegates to represent the colleges and associations, three delegates to represent those interested in the animal industries as above enumerated, three delegates to represent those interested in matters relating to cereal crops, and three delegates to represent those interested in the subject of the management of vineyards and the manufacture of wine.

Will you be kind enough to designate some person of your society who will be willing to read a paper before the convention which he is elected to attend, and notify me of your selection.

Please send this department a list of the delegates as soon as they are chosen.

Very Respectfully,

GEO. B. LORING,
Commissioner of Agriculture.

Motion of Mr. Gillham carried,

That the communication be received and delegates appointed as requested.

Mr. Cobb nominated President Scott.

Mr. Haskell nominated Ex-President Gillham.

Mr. Landrigan nominated Vice-President Reynolds.

On motion of Mr. Beaty,

The nominations were confirmed, and the Secretary instructed to furnish the delegates the proper credentials.

On motion of Mr. Gillham,

The President was authorized to appoint three alternates.

President appointed as alternates Messrs. Haskell, Beaty and Washburn.

Motion of Mr. Cobb carried,

That the selection of a delegate to prepare paper to be read, as well as the subject, be left to the delegates.

Motion of Mr. Reynolds carried,

That President Scott, Vice-Presidents Landrigan and Vittum be appointed a committee to arrange for a special trotting race for Friday afternoon.

On motion of Mr. Cobb,

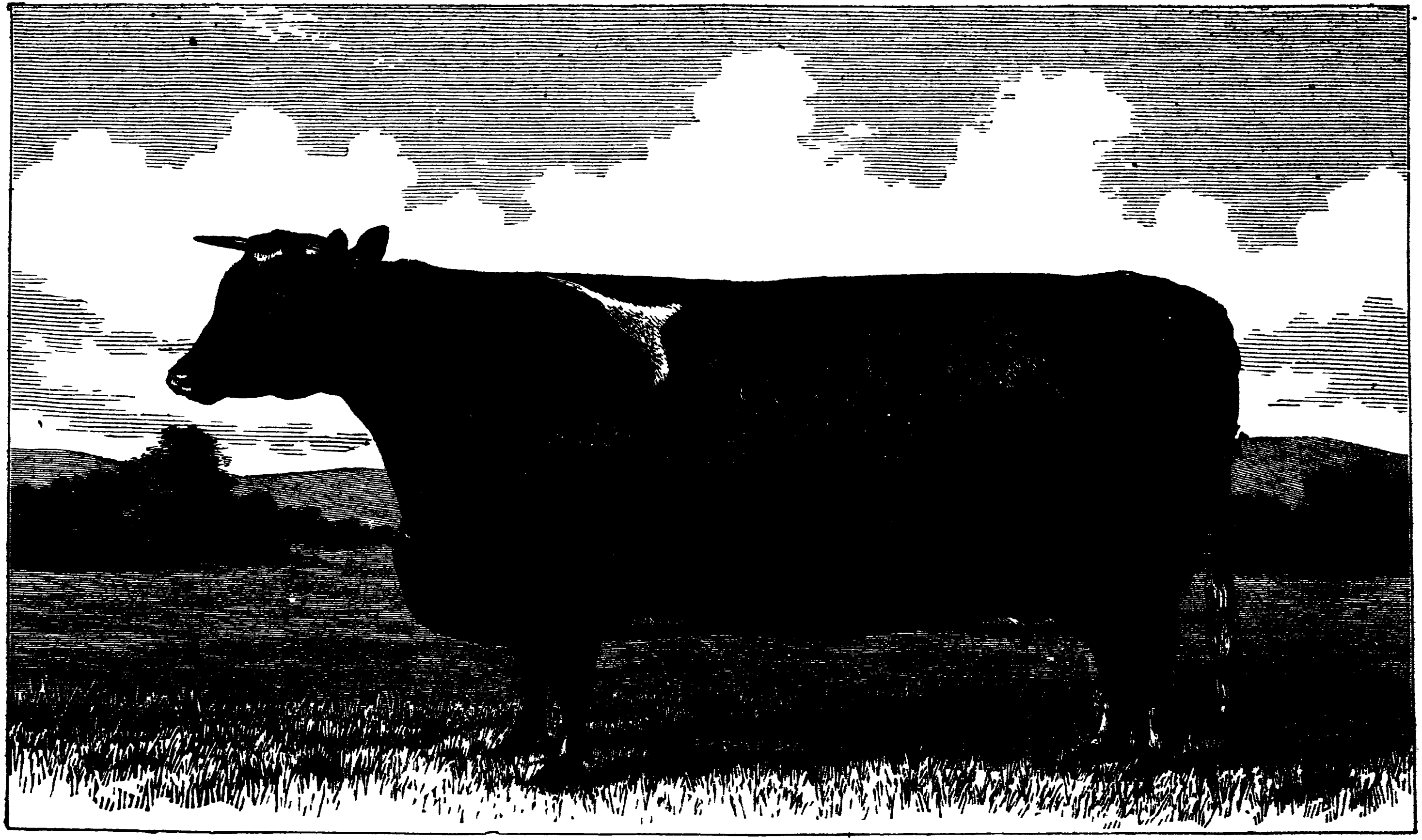
Messrs. Judy and Beaty were added to the committee.

On motion of Mr. Moore,

The Board adjourned, subject to the call of the President.

S. D. Fisher,
Secretary.

J. R. Scott,
President.



Short Horn Cow Priscilla 8th, exhibited by J. H. Potts & Son, Jacksonville, Ill. Awarded Sweepstakes Premium. State Fair. 1881.—D 27

LIST OF AWARDS

AT THE

ILLINOIS STATE FAIR FOR 1881.

PEORIA SEPTEMBER 26, TO OCTOBER 1.

CLASS A—CATTLE.

W. M. SMITH, *Superintendent.*

LOT 1—SHORT HORNS—THOROUGHBRED.

Bull, 3 years old or over—3 entries

First premium, H. Sodowsky, Indianola $25 00

Gen Hopewell.

Second premium, J. H. Potts & Son, Jacksonville 15 00

Master Richmond, 33239; red; calved March 4, 1878, bred by J. H. Potts & Son, Jacksonville; sire, Imp. Duke of Richmond 21525; dam, Phillis of Oakland, by Master Geneva, 20368.

Bull, 2 years old and under 3—3 entries:

First premium, J. H. Potts & Son, Jacksonville 25 00

Royal Commander, 36878; red; calved January 22, 1879; bred by J. H. Potts & Son, Jacksonville; sire, Frederick William, 23195; dam, Priscilla, by 3d Lord of Racine, 21649.

Second premium, Wm. Stevenson & Son, Little Indian 15 00

Grand Duke Oxford A. H. B. 39178; red, with some white; calved July 15, 1879; bred by H. C. Hutchcraft, Paris, Ky; sire, 2d Duke of Clark 39169; dam Airdrie Bell 4th, by Imp. Oxford Beau 2d 15068.

Bull, 1 year old and under 2—2 entries

First premium, J. H. Potts & Son, Jacksonville 20 00

Proud Duke, 36660; red; calved November 9, 1879; bred by J. H. Potts & Son, Jacksonville; sire, Imp. Duke of Richmond, 21525; dam Fannie Airdrie, by Summit Airdrie, 12997.

Second premium, J. H. Potts & Son, Jacksonville 10 00

Antiquary, Imp.; red; calved November 17, 1879; bred by A. Cruikshank, Littyton, Aberdeenshire, Scotland; Imported 1881, by J. H. Potts & Son, Jacksonville; sire, Pride of the Isles, (35072); dam Azalia, by Caesar Augustus (25704).

Bull, under 1 year old—4 entries:

First premium, J. H. Potts & Son, Jacksonville 15 00

Royal Commander 3d; red; calved December 15, 1880; bred by J. H. Potts & Son, Jacksonville; sire, Master Richmond, 33239; dam Priscilla, by 3d Lord of Racine, 21649.

Second premium, D. G. Ryburn, Randolph 10 00

Columbia Chief, A. H. B., 38012, calved November 12, 1880; bred by D. G. Ryburn, Randolph; sire, The Prior, 21190; dam Caroline 14.

COWS AND HEIFERS.

Cow 4 years old or over—8 entries:
First premium, J. H. Potts & Son, Jacksonville $25 00
Priscilla 8th; red; calved April 21, 1876; bred by Birrell & Johnston, Canada; sire, 3d Lord of Racine 21649; dam Priscilla 7th, by Lord St. Leonards (29202).
Second premium, H. Sodowsky, Indianola 15 00
Vermilion.

Cow, 3 years old and under 4—4 entries:
First premium, H. Sodowsky, Indianola 25 00
Louan 40.
Second premium, J. H. Potts & Son, Jacksonville 15 00
Emma 5th; red; calved September 12, 1878; bred by J. H. Potts & Son, Jacksonville; sire Frederick William (23195); dam Imp. Emma 3d, by Young Englishman (31113).

Heifer, 2 years old and under 3—5 entries;
First premium, H. Sodowsky, Indianola 25 00
Jesse Hopewell.
Second premium, J. H. Potts & Son, Jacksonville 15 00
Duchess of Oakland; red; calved October 5, 1878; bred by J. H. Potts & Son, Jacksonville; sire Imp. Duke of Richmond (21525); dam Duchess of Clark 5th by 2d Duke of Airdrie 12091.

Heifer, 1 year old and under 2—5 entries:
First premium, D. G. Ryburn, Randolph 20 00
Lucy Meeker; calved October 21, 1879; bred by D. G. Ryburn, Randolph; sire The Prior 21190; dam Caroline 14.
Second premium, J. H. Potts & Son, Jacksonville 10 00
Red Lady of Oakland; red; calved February 13, 1880; bred by J. H. Potts & Son, Jacksonville; sire Imp. Duke of Richmond 21525; dam Imp. Red Lady, by Scotland's Pride, (25100).

Heifer under 1 year old—4 entries:
First premium, J. H. Potts & Son, Jacksonville 15 00
Fanny Airdrie 3d; red; calved January 11, 1881; bred by J. H. Potts & Son, Jacksonville; sire, Royal Commander, 36878; dam, Fanny Airdrie 2d by Imp. Duke of Richmond, (21525).
Second premium, D. G. Ryburn, Randolph 10 00
Nellie Noble; calved November 6, 1880; bred by D. G. Ryburn, Randolph; sire, The Prior, 21190; dam, Miami 22d.

Awarding Committee.—W. Scott, Wyoming; A. A. Richardson, Secor; E. E. Chester, Champaign.

LOT 2—SHORTHORNS—THOROUGHBRED—HERD.

Herd, to consist of bull 2 years old or over, cow 3 years old or over, heifer 2 years old and under 3, heifer 1 year old and under 2, heifer under 1 year old—2 entries:
Premium, J. H. Potts & Son, Jacksonville $50 00
Master Richmond, 33239; Priscilla 8th; Cassa of Oakland; Rod Lady of Oakland, Fanny Airdrie 3d.

Awarding Committee.—C. Dawson, Lexington; H. M. Winslow, Kankakee; R. R. Stevenson, Little Indian.

LOT 3—SHORTHORNS—THOROUGHBRED—SWEEPSTAKES.

Bull of any age—6 entries:
Premium, H. Sowdowsky, Indianola $50 00
Geo. Hopewell.
Cow or heifer of any age—12 entries:
Premium, J. H. Potts & Son, Jacksonville 50 00
Priscilla 8th.

Awarding Committee.—W. G. Culbertson, Mays Station; John Hunter, Owaneco; Wm. Armsbury, Beason; G. Weedman, Farmer City.

LOT 4—HEREFORDS—THOROUGHBRED.

Bull, 3 years old or over—2 entries:
First premium, C. M. Culbertson, Chicago $25 00
Sir Garnett, Imp. (E. H. R., 6180); red, with white face; calved July 28, 1878; bred by Aaron Rogers; sire, The Grove 3d (E. H. R., 5051; dam, Lady, by Speculation, (E. H. R., 4149).

Second premium, C. M. Culbertson, Chicago ... $15 00
Landlord, Imp., (E. H. R., 6010); red, with white face; calved August 4, 1878; bred by Mrs. S. Edwards; sire, Royalist, (E. H. R., 4921); dam, Laura by Winter-de-Cote, (E. H. R., 4253).

Bull, 2 years old and under 3—3 entries:
First premium, Wm. Constable, Beecher ... 25 00
Imp. Hero, 5964; calved June 17, 1879; bred by John Price, Pembridge, Eng.; sire, Regulus, 4076; dam, Spot.
Second premium, Thomas Clark, Beecher ... 15 00
Imp. Anxiety 3d, (6181); calved July 3, 1879; bred by T. J. Carwardine, Leominster, Eng.; sire, Anxiety, 2238 (E. H. R., 5188); dam, Tiny.

Bull under 1 year old—6 entries.
First premium, C. M. Culbertson, Chicago ... 15 00
Anxiety 4th; red, with white face; calved November 2, 1880; bred by C. M. Culbertson, Chicago; sire, Anxiety, (E. H. R., 5188); dam, Cherry 24th by Wrexham, (E. H. R., 4260).
Second premium, Thos. Clark, Beecher ... 10 00
Livelong; calved November 18, 1880; bred by Thos. Clark, Beecher; sire, Sir Richard 3d, 714; dam, Lily, 1427.

COWS AND HEIFERS.

Cow, 4 years old or over—8 entries
First premium, C. M. Culbertson, Chicago ... 25 00
Cherry 24th, Imp., (A. H. R., 2410); red, with white face; calved March 16, 1877; bred by J. B. Green; sire, Wrexham, (E. H. R., 4260); dam, Cherry 4th by Zealous, (E. H. R., 2349).
Second premium, C. M. Culbertson, Chicago. ... 15 00
Downton Rose, Imp.; red, with white face; calved July 26, 1877; bred by Thos. Fenn; sire, Blakemere, (E. H. R., 5227); dam, Rose of the Teme by Silver Chief, (E. H. R., 4952)

Cow, 3 years old and under 4—5 entries:
First premium, C. M. Culbertson, Chicago ... 25 00
Perfection 2d, Imp., (A. H. R., 2749); red, with white face; calved January 17, 1878; bred by Wm. Badham, sire, Sailor Prince, (E. H. R., 5561); dam, Perfection by Leominster, (E. H. R., 3910).
Second Premium, C. M. Culbertson, Chicago ... 15 00
Beauty 2d (A. H. R., 1367); red, with white face; calved May 12, 1878, bred by T. L. Miller, Beecher; sire, Richard 2d, (E. H. R., 4984), dam, Mystic Maid, by Compton Lad, (E. H. R., 3764).

Heifer, 2 years old and under 3—5 entries:
First premium, C. M. Culbertson, Chicago ... 25 00
Lady White Face, A. H. R., 1506, red, with white face; calved November 28, 1878; bred by C. M. Culbertson, Chicago, sire, Success, (E. H. R., 5031); dam, Almira, by Sir Charles, (E. H. R., 3434).
Second premium, Thomas Clark, Beecher ... 15 00
Fancy, 1973; calved May 7, 1879; bred by Wm. Constable, Beecher; sire, Seventy-Seven, 1091; dam, Modest, 1541.

Heifer, 1 year old and under 2—4 entries
First premium, Thos. Clark, Beecher ... 20 00
Miss Turner, Imp.; calved September 20, 1880; bred by P. Turner, Pembridge, Eng.; sire, The Grove 3d, (E. H. R., 5051); dam, Ruby.

Second premium, Thos. Clark, Beecher ... 10 00
Jessie Clark, calved July 17, 1880; bred by Thos. Clark, Beecher; sire, Grateful, 940; dam, Jessie, 2668.

Heifer under 1 year old—2 entries
First premium, C. M. Culbertson, Chicago ... 15 00
Helena 2d; red, with white face; calved November 16, 1880; bred by C. M. Culbertson, Chicago; sire, Anxiety, (E. H. R., 5188); dam, Sunset, by Success, (E. H. R., 5031).
Second premium C. M. Culbertson, Chicago ... 10 00
Helena 3d, red, with white face; calved December 1, 1880, bred by C. M. Culbertson, Chicago; sire, Anxiety, (E. H. R., 5188), dam, Anguilla, by Sir Richard 2d, (E. H. R., 4984).

Awarding Committee.—Rigdon Huston, Blandinsville; W. H. H. Holdridge, Tonica; John W. Hunter, Owaneco.

LOT 5—HEREFORDS—THOROUGHBRED—HERD.

Herd to consist of bull 2 years old or over, cow 3 years old or over, heifer 2 years old and under 3, heifer 1 year old and under 2, heifer under 1 year—3 entries:
Premium, C. M. Culbertson, Chicago ... $50 00
Sir Garnott, Imp., (E. H. R., 6180); Cherry 24th, Imp., A. H. R., 2410; Lady Whiteface, A. H. R., 1506; Beulah; Helena 5th.

Awarding Committee.—W. N. Beverly, Cerro Gordo; John O. Davis, Heyworth; W. H. Bundy, Carterville.

LOT 6—HEREFORDS—THOROUGHBRED—SWEEPSTAKES.

Bull of any age—4 entries:
Premium, C. M. Culbertson, Chicago $50 00
Sir Garnet; Imp.(E. H. R. 6180).

Cow or Heifer of any age—11 entries.
Premium, C. M. Culbertson. Chicago 50 00
Cherry 24th; Imp. A. H. R. 2410.

Awarding Committee—Jas. Lounes, Table Grove; Edward Dyburn, Bloomington; A. M. Winslow, Kankakee.

LOT 7—DEVONS—THOROUGHBRED.

BULLS.

Bulls 3 years old or over—3 entries:
First premiums, D. J. Whitmore, Casstown, O $25 00
Barefoot, 272; calved April 22, 1873; bred by J. Buckingham, Zanesville, O.; sire, Barena, 280; dam Helena 28th, 1434.
Second premium, O. B. King, Watertown, Conn 15 00
Sam's Sam, 1985; calved March 12, 1877; bred by O. B. King, Watertown, Conn; sire, Sam, 1095; dam, Beauty 1st, 586.

Bull, 1 year old and under 2—2 entries:
First premium, Wm. Younger, Fairbury 20 00
Romus; calved February 15, 1880; bred by William Younger, Fairbury; sire, Shelto 2d, 1338; dam, Orphan Girl, 1967.
Second premium, O. B. King, Watertown, Conn 10 00
Gen. Hancock, 1951; calved May 21, 1880; bred by O. B. King, Watertown Conn; sire, Grant, 638; dam, Sontag 3d, 2544.

Bull, under 1 year old—8 entries:
First premium, L. F Ross, Avon 15 00
10th Duke of Avon; calved April 3, 1881; bred by L. F. Ross, Avon; sire, Shelto 2d, 1338, dam, Flora, 2322.
Second premium, Wm. Younger, Fairbury 10 00
Romeo; calved April 7, 1881, bred by Wm. Younger, Fairbury; sire, Colonel Ryan, 1160, dam, Lady May 2d, 1815

COWS AND HEIFERS.

Cow, 4 years old or over—10 entries:
First premium, L F. Ross, Avon 25 00
Mina Hilton, 1139; calved February 27, 1872; bred by D. C. May, Rochelle, sire, Madison, 272, dam, Gipsey 504
Second premium, Wm. Younger, Fairbury 15 00

Cow, 3 years old and under 4—3 entries.
First premium, D J. Whitmore, Casstown, O 25 00
Effie, 3194, calved March 20, 1878; bred by D. J. Whitmore, Casstown, O.; sire, Butler, 357, dam, Kitty Clover, 1684.
Second premium, L. F Ross, Avon 15 00
Cute 2d, 2233½, calved June 11, 1878; bred by L. Rawson, Oak Creek, Wis.; sire Rochelle, 1043, dam, Cute, 1529.

Heifer, 2 years old and under 3—4 entries:
First premium, L. F. Ross, Avon 25 00
Zephyr, 2679; calved August 10, 1879, bred by L. F. Ross, Avon; sire Shelto 2d, 1338; dam, Henrietta, 2383
Second premium, D. J. Whitmore, Casstown, O 15 00
Lilith, 3195, calved February 27, 1879; bred by D. J. Whitmore, Casstown, O.; sire Barefoot, 272; dam, Kitty Clover, 1684.

Heifer, 1 year old and under 2—6 entries:
First premium, D. J. Whitmore, Casstown, O 20 00
Missouri, 3190; calved October 13, 1879; bred by D. J. Whitmore, Casstown, O.; sire Barefoot, 272; dam, Winnie, 2700
Second premium, Wm. Younger, Fairbury 10 00
Rosey, calved May 25, 1880, bred by Wm. Younger, Fairbury; sire, Colonel Ryan, 1160; dam, Lady May 2d, 1815

Heifer under 1 year old, 5 entries:
First premium, D. J. Whitmore, Casstown, O 15 00
Bertha, calved January 27, 1881; bred by D. J. Whitmore, Casstown, O.; sire Elgin, 531; dam, Nina, 2152
Second premium, wm Younger, Fairbury 10 00
Fanny Hill; calved April 14, 1881; bred by Wm. Younger, Fairbury; sire, Colonel Ryan, 1160; dam, Lady Ross, 2443.

Awarding Committee—W. H. Mann, Gilman; E. S. Erskine, Sparland; Thornton Hunter, Owaneco.

LOT 8—DEVONS—THOROUGHBRED—HERD.

Herd to consist of bull 2 years old or over, cow 3 years old or over, heifer 2 years old and under 3, heifer 1 year old and under 2, heifer under 1 year—3 entries:
Premium, D. J. Whitmore, Casstown, O $50 00
Barefoot, 272; Kitty Clover, 1684; Lillith, 3195; Missouri, 3190; Bertha.

Awarding Committee—W. J. Neeley, Ottawa; J. H. Potts, Jacksonville; J. B. Barnes, Ottawa; P. A Coen, Washburn; Horace Tarbell, Peoria.

LOT 9—DEVONS—THOROUGHBRED—SWEEPSTAKES.

Bull of any age—7 entries·
Premium, Wm. Younger, Fairbury $50 00

Cow or heifer of any age—9 entries·
Premium, Wm. Younger, Fairbury 50 00

Awarding Committee—D. G. Ryburn, Randolph; G. Weedman, Farmer City; Conrad Secrest, Watseka.

LOT 10—POLLED ANGUS—THOROUGHBRED.

Bull, 3 years old or over—1 entry.
First premium, Anderson & Findlay, Lake Forest $25 00
Nicolis, 1638; calved April 7, 1877; bred by Jas. Walker, West Side Kildrumy, Aberdeen, Scotland; sire, Carlos, 673; dam, Bess of Bogfern, 1225.

Bull, 1 year old and under 2—2 entries:
First premium, Frank B. Redfield, Batavia, N. Y 20 00
Prince of Batavia (1898); calved April 17, 1880; bred by Thos. Ferguson, Kinnochtry; Coupar Angus, Scotland; sire, Shah (680); dam, Princess 3d (1771) by Crathie 2d, 342.
Second premium, Frank B. Redfield, Batavia, N. Y 10 00
Maurice (1900); calved May 3, 1880; bred by Thos Ferguson, Kinnochtry, Coupar Angus, Scotland; sire, St. Clair (1160); dam, Mina 4th (3843), by Jeweller (551).

Bull under 1 year old—2 entries·
First premium, Frank B. Redfield, Batavia, N. Y 15 00
Baron Hiawatha; calved May 6, 1881; bred by Frank B. Redfield, Batavia, N Y.; sire, Field Marshall (1778); dam, 3d Baroness of Kinnochtry (3294); by Shah (680).
Second premium, Anderson & Findlay, Lake Forest 10 00
Hiawatha; calved July 12, 1881, bred by Anderson & Findlay, Lake Forest, sire, Nicolis, 1638; dam, Diana 4th, 4228.

COWS AND HEIFERS.

Cow 4 years old or over—3 entries·
First premium, Anderson & Findlay, Lake Forest 25 00
Violet of Bruce Hill, 3747; calved Feb. 17, 1877; bred by Anderson & Findlay, Lake Forest, sire Byron of Campfield, 929; dam, Ruby 3d.
Second premium, Anderson & Findlay, Lake Forest 15 00
Diana 4th, 4228; calved March 13, 1877; bred by Col. Ferguson, Pitfour, Old Deer, Scotland; sire, Logie the Laird 3d, 862; dam, Diana, 1185.

Cow, 3 years old and under 4—2 entries·
First premium, Frank B. Redfield, Batavia, N. Y 25 00
Princess 8th (3298); calved April 16, 1878; bred by Thos Ferguson, Kinnochtry, Scotland; sire, Shah (680); dam, Princess 2d (916), by Young Hugh (131).
Second premium, Frank B. Redfield, Batavia, N. Y 15 00
3d Baroness of Kinnochtry (3294); calved April 12, 1878; bred by Thos. Ferguson, Kinnochtry, Coupar Angus, Scotland; sire, Shah (680); dam, Theresa (1773), by Alfred of Kinnochtry (341).

Heifer, 2 years old and under 3—3 entries.
First premium, Frank B. Redfield, Batavia, N. Y 25 00
6th Baroness of Kinnochtry (4341); calved April 15, 1879; bred by Thos. Ferguson, Kinnochtry, Coupar Angus, Scotland; sire, Shah (680); dam, Georgina of Kinnochtry (3119), by Keillor 2d (433).
Second premium, Frank B. Redfield, Batavia. N. Y 15 00
Princess 10th (4339); calved March 10, 1879; bred by Thos. Ferguson, Kinnochtry, Coupar Angus, Scotland; sire, Shah (680), dam, Princess 4th (1772), by Alfred of Kinnochtry (341).
Heifer, 1 year old and under 2—5 entries
First premium, Frank B. Redfield, Batavia, N. Y 20 00
Princess 12th, (4345); calved January 17, 1880; bred by Thos. Ferguson, Kinnochtry, Coupar Angus, Scotland; sire, Shah (680); dam, Princess 4th (1772), by Alfred of Kinnochtry (341).

Second premium, Anderson & Findlay, Lake Forest.............. .... $10 00
Weetamoo; calved September 18, 1880; bred by Anderson & Findlay, Lake Forest; sire, Nicolis, 1633; dam, Violet of Bruce Hill, 3747.

Heifer, under 1 year old—4 entries:
First premium, Frank B. Redfield, Batavia, N. Y.......... .... 15 00
Princess A. (5018); calved April 19, 1881; bred by Frank B. Redfield, Batavia, N. Y. sire, Field Marshall, (1778); dam, Princess 8th, (3298), by Shah, (680).
Second premium, Anderson & Findlay, Lake Forest 10 00
Menonah; calved April 24, 1881; bred by Anderson & Findlay, Lake Forest; sire, Nicolis, 1633; dam, Lazy 3d, 4298.

Awarding Committee—D. R. Potter, Fairbury, H. C. Hays, Lexington; John H. Crandall, Morton.

LOT 11—POLLED ANGUS—THOROUGHBRED—HERD.

Herd, to consist of bull 2 years old or over, cow 3 years old or over, heifer 2 years old and under 3, heifer 1 year old and under 2, heifer under 1 year—1 entry:
Premium, Anderson & Findlay, Lake Forest $50 00
Nicolis, 1633; Diana 4th, 4228; Weetamoo; Winnemucca; Pocahontas.

Awarding Committee—Horace Tarbell, Peoria; P. R. Coen, Washburn; J. B. Barnes, Ottawa.

LOT 12—POLLED ANGUS—THOROUGHBRED—SWEEPSTAKES.

Bull of any age—4 entries.
Premium, Frank B. Redfield, Batavia, N. Y $50 00
Manrico, (1900).

Cow or Heifer of any age—7 entries:
Premium, Frank B. Redfield, Batavia, N. Y.. 50 00
Princess 8th, (3298).

Awarding Committee—J. S. Johnson, Elderville; B. K. Durfee, Decatur; John A. Ewins, Danvers.

LOT 13—HOLSTEINS—THOROUGHBRED.

BULLS.

Bull, 3 years old or over—3 entries.
First premium, Unadilla Valley Stock Breeders' Association, West Edmeston, N. Y.......... .... $25 00
Movie, 26; Dutch Friesian H. B., Imp.; calved March 20, 1878; bred by A. W. Oosterbaum, West Friesland.
Second premium, W. A. Pratt, Elgin....... .... 15 00
Duke Hanover, 227.

Bull, 2 years old and under 3—1 entry
First premium, Unadilla Valley Stock Breeders Association, West Edmeston, N. Y 25 00
Aac, 17; Dutch Friesian, H. B., Imp.; calved March 25, 1879; bred by A. B. Cuperus, West Friesland.

Bull under one year old—1 entry.
First premium, W. A. Pratt, Elgin... 15 00
Dellmont, 914.

COWS AND HEIFERS.

Cow 4 years old or over—5 entries:
First premium, Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y.... $25 00
Jacoba Hartog, 2; Dutch Friesian, H. B., Imp.; calved March 1, 1874; bred by Jacob Hartog.
Second premium, Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y. 15 00
Sjored, 71; Dutch Friesian, H B., Imp.; calved February 20, 1875; bred by Albert S. Hecy.

Cow, 3 years old and under 4—2 entries:
First premium, Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y.... 25 00
Jacoba Hartog 2d, 24; Dutch Friesian, H. B.; calved April 29, 1878; bred by Unadilla Valley Stock Breeders' Ass'n, West Edmeston, N. Y.; sire, Burgomaster of Beemster, No. 1; dam, Jacoba Hartog, 2.
Second premium, W. A. Pratt, Elgin 15 00

COWS AND HEIFERS.

Cow, 4 years old or over—17 entries:
First premium, Hoover & Co., Columbus, O........ $25 00
Pride of Eastwood, 10277; calved May 23, 1877; bred by G. M. Hoover, Columbus, O.; sire, Black Prince, 1971; dam, Starlight Rose, 8804.
Second premium, Wm N. Combs, Fairbury........ 15 00
Florretta, A. J. H. B. 3118; calved August 21, 1877; bred by V. Barber, Decatur; sire, Etta, 2535.

Cow, 3 years old and under 4—10 entries:
First premium, Hoover & Co., Columbus, O........ 25 00
Pierrot's Lady Hayes, 11672; calved June 12, 1878; bred by F. Fitch, New London, Ct.; sire, Pierrot 7th, 1667; dam, Little Sister, 11666.
Second premium, W. L. Gardiner, Norwalk, O........ 15 00
Rosey Kate, 10276.

Heifer 2 years old and under 3—7 entries:
First premium, Hoover & Co., Columbus, O........ 25 00
Daisy Cobden, 8812; calved May 25, 1879; bred by J. P. Loose & Son, LaFayette, Ind.; sire, Cobden, 1871; dam, Daisy Toodles, 4248.
Second premium, D. H. & S. S. Tripp, Peoria........ 15 00
Posey of Glenmyla (10027); calved September 15, 1879; sire, Renoda, (2329), dam, Bowly (1946).

Heifer, 1 year old and under 2—14 entries:
First premium, D. H. & S. S. Tripp, Peoria........ 20 00
Marea (10167); calved March 26, 1880: sire, LeBrocq's Prize (3350), Imp.; dam, Mamie Coburn (3798.)
Second premium, Hoover & Co., Columbus, O........ 10 00
Ma Belle of Eastwood 10358; calved November 26, 1879; bred by G. D. Coleman, Brickerville, Penn.; sire, Vespers Royal Son, 2946; dam, Miss Sulock, 6614.

Heifer, under 1 year old—11 entries:
First premium, Hoover & Co., Columbus, O........ 15 00
Lass Rex; calved October 11, 1880; bred by Hoover & Co., Columbus, O.; sire, Cash Boy 2248; dam, Buckeye Lass, 10353.
Second premium, D. H. & S. S. Tripp, Peoria........ 10 00
Carrie Gray, 11157, calved October 10, 1880; bred by Z. C. Luse & Son; sire, Kit Carson (1772); dam, Mabel Gray, 2490.

Awarding Committee—H. C. Claypool, Morris; John C. White, Effingham; R. H. Fairchild, Metamora, I. R Gaston, Normal.

LOT 17—JERSEYS—THOROUGHBRED—HERD.

Herd, to consist of bull, 2 years old or over; cow, 3 years old or over; heifer, 2 years old and under 3; heifer, 1 year old and under 2; heifer, under 1 year—4 entries
Premium, D. H. & S. S. Tripp, Peoria........ $50 00
Prince of Glenwood, 3199; Pomare, 6003; Posey of Glenmyla, 10744; Marea, 10167; Annie's Orphan, 12867.

Awarding Committee—J. H. Pickrell, Harristown; J. M. Dooley, Bloomington; M. T. Stookey, Belleville.

LOT 18—JERSEYS—THOROUGHBRED—SWEEPSTAKES.

Bull of any age—10 entries:
Premium, W. L. Gardiner, Norwalk, O........ $50 00
Rex, 1330.

Cow or Heifer, any age—13 entries.
Premium, W. L. Gardiner, Norwalk, O........ 50 00
Jessamine, 768.

Awarding Committee—F. W. Beardsley, Gibson City; George Huff, Champaign; George Noyes, Kankakee.

LOT 19—AYRSHIRES—THOROUGHBRED.

BULLS.

Bull, 3 years old or over—5 entries:
First premium, A. J. Wilson, Grafton, O........ $25 00
Forester, 1766; calved February 24, 1876; bred by James Laurie, Malvern, Ont.; Sire, Seafield 2d, 1709; dam, Dairy Maid, 3407.
Second premium, John Stewart, Blackberry........ 15 00
Lincoln, 2285; calved March 19, 1878; bred by John Stewart, Blackberry; sire, Grant, 2284; dam, Lady Jane, 2666.

Bull, 2 years old and under 3—4 entries:

First premium, J. F. Converse, Woodville, N. Y. $25 00

Mexico Prince, 2431; calved April, 1879; bred by J. Converse, Woodville, N. Y.; sire, W. Chief, 1542; dam, L. Pender, 2688.

Second premium, N. N. Jones, Normal 15 00

Spring of 1879; bred by Daniel Bigelow, Copopa, O.; sire, Forrester, 1766; dam, Helen Douglas, 2489.

Bull, 1 year old and under 2—2 entries:

First premium, J. F. Converse, Woodville, N. Y 20 00

Clifton, 2424; calved March, 1880; bred by J. Converse, Woodville, N. Y.; sire, W. Chief, 1542; dam, L. Pender, 2688.

Second premium, A. J. Wilson, Grafton, O 10 00

Forester 2d; calved August 1, 1880; bred by A. J. Wilson, Grafton, O.; sire, Forester, 1766; dam, Nelly Dutchess.

Bull under 1 year old—7 entries

First premium, W. A. May, Pekin 15 00

Ninkle, calved April 7, 1881; bred by W. A. May, Pekin; sire, Comet of Potsdam, 559, dam, Rosa Bella, 4143.

Second premium, John Stewart, Blackberry 10 00

Illinois; calved December 13, 1880; bred by John Stewart, Blackberry; sire, Grant, 2284; dam, Lady Jane, 2666.

COWS AND HEIFERS.

Cow, 4 years old or over—16 entries:

First premium, A. J. Wilson, Grafton, O. $25 00

Dairy Maid, 2203; calved January 13, 1872; bred by James Laurie, Malvern, Ont.; sire, Avondale Farmer, 422; dam, Dandy, 2233.

Second premium, John Stewart, Blackberry 15 00

Hattie Kane, 4893; calved March 18, 1876; bred by John Stewart, Blackberry; sire, Geo. 3d, 1154; dam, Maggie, 2793:

Cow, 3 years old and under 4—5 entries

First premium, J. F. Converse, Woodville, N. Y. 25 00

Molly Kimball, 4350, calved November 9, 1877; bred by J. F. Converse, Woodville, N. Y.; sire, Fear-not, 1131, dam, O. Belle 2d, 3033.

Second premium, John Stewart, Blackberry 15 00

Hattie 2d, calved August 15, 1878; bred by John Stewart, Blackberry; sire, Grant, 2284; dam, Hattie Kane, 4893.

Heifer, 2 years old and under 3—4 entries·

First premium, John Stewart, Blackberry 25 00

Lillie Grant, 4897; calved May 10, 1879; bred by John Stewart, Blackberry; sire, Grant, 2284; dam, Topsy K., 4901.

Second premium, J. F. Converse, Woodville, N. Y. 15 00

Maggie Drummond 2d, 5268, calved December 1, 1878; bred by O. Brown, Providence, R. I., sire, Pr. Edward, Jr., 2003, dam, M. Drummond, 3645.

Heifer, 1 year old and under 2—14 entries:

First premium, J. F. Converse, Woodville, N. Y. 20 00

Sorata, 5243, calved April, 1880, bred by J. F Converse Woodville, N. Y.; sire; S. Dexter, 2020; dam, M Kimball, 4350.

Second premium, A. J. Wilson, Grafton, O. 10 00

Miss Carns; calved April 4, 1880, bred by A. J. Wilson, Grafton, O.; sire, Forester, 1766; dam, Dairy Maid of Lorain, 4678.

Heifer under 1 year old—7 entries·

First premium, W. A. May, Pekin 15 00

Pattie, calved July 8, 1881; bred by W. A. May, Pekin; sire, Comet of Potsdam, 559; dam, Lilly.

Second premium, J. F. Converse, Woodville, N. Y. 10 00

Belle Cook; calved April, 1881; bred by J. F. Converse, Woodville, N. Y.; sire, P. Charley, 1689, dam, Evaline, 3470.

Awarding Committee—Isaac Tarbell, Peoria; Thomas Oliver, Elmira; W. F. Whitson, Rushville.

LOT 20—AYRESHIRES—THOROUGHBRED—HERDS.

Herd, to consist of bull 2 years old or over, cow 3 years old or over, heifer 2 years old and under 3, heifer 1 year old and under 2, heifer under 1 year old—4 entries·

Premium, J F. Converse, Woodville, N. Y $50 00

Maj. Drummond, 2006; Helen Pender, 2494; Maggie Drummond, 5268; Cosetta, 5210; Belle Cook.

Awarding Committee—W. H. Mann, Gilman; J. B. Barns, Ottawa; R. H. Fairchild, Metamora.

LOT 21—AYRESHIRES—THOROUGHBRED—SWEEPSTAKES.

Bull of any age—6 entries.
Premium, John Stewart, Blackberry $50 00
Lincoln, 2285.

Cow or heifer of any age—19 entries:
Premium, John Stewart, Blackberry 50 00
Blackberry Maid, 4891; calved March 15, 1875; bred by John Stewart, Blackberry; sire, George 3d, 1154; dam, Lady Jane, 2666.

Awarding Committee—John Thomas, Lincoln; S. B. Burchard, Kankakee; John Bable, Champaign.

LOT 22—SWEEPSTAKES—HERD.

BEEF BREEDS.

Bull and 4 cows or heifers of any age—12 entries:
First premium, H. Sodowsky, Indianola $300 00
Gen. Hopewell; Jessie Hopewell; Louan Fairview; Louan, 40; Louan, 38.
Second premium, J. H. Potts & Son, Jacksonville 125 00
Master Richmond, 33239; Priscilla 8th; Emma 4th; Emma 5th; Cassa Oakland 2d.
Third premium, C. M. Culbertson, Chicago 75 00
Sir Garnett, Imp., (E. H. R., 6180); Cherry 24th, Imp., A. H. R., 2410; Downton Rose, Imp.; Nancy 2d; Beauty 2d, A. H. R., 1367.

Awarding Committee—Dennis Kenyon, McLean; A. B. Nicholson, Lincoln; S. B. Burchard, Kankakee; John B. Ricks, Taylorville; Dwight Lawrence, Prairie Center; (H. L. Aspern, Champaign, called in).

LOT 23—SWEEPSTAKES—HERD.

MILK BREEDS.

Bull and 4 cows or heifers, any age—17 entries:
First premium, Unadilla Valley Stock Breeders' Asso'n, West Edmeston, N. Y. ... $300 00
Movie, 26; Sjored, 71; Kleiterp, 70; Jacoba Hartog, 2; Unadilla Twisk, 32.
Second premium, John Stewart, Blackberry 125 00
Lincoln, 2285; Blackberry Maid, 4891; Hattie; Hattie 2d, Spotty Grant, 4900.
Third premium, W. L. Gardiner, Norwalk, O 75 00
Rex, 1330; Bessie Sevan, 5002; Jessamine, Queen of the Farm; ——, (66).

Awarding Committee—S. B. Gillham, Alton; John Bable, Champaign; F. W. Beardsley, Gibson City.

CLASS B—HORSES.

D. E. BEATY, *Superintendent.*

LOT 24—THOROUGHBRED.

STALLIONS.

Stallion, 4 years old or over—4 entries:
First premium, Wiley Buckles, Champaign $25 00
Second premium, A. B. Watts, Farmingdale 15 00
Voltigeur; foaled 1872; bred by Gen. Harding, Nashville, Tenn.; sire, Vandal; dam, Duett, by Highlander.

Stallion, 3 years old and under 4—1 entry:
First premium, Whitten Bros., Wilmington 20 00
Lord Lyon; bred by Whitten Bros., Wilmington; sire, Lochiel; dam, Imp. Mudline, by Imp. Lord Lyon.

Stallion colt under 1 year old—3 entries:
First premium, Wiley Buckles, Champaign 15 00
Second premium, A. B. Watts, Farmingdale 10 00
Arvon; foaled 1881; bred by A. B. Watts, Farmingdale; sire, Voltigeur; dam, Ate.

MARES.

Mare, 4 years old or over—4 entries:	
First premium, Wiley Buckles, Champaign	$25 00
Second premium, Wiley Buckles, Champaign	15 00
Mare, 3 years old and under 4—1 entry:	
First premium, Wiley Buckles, Champaign	20 00
Mare, 2 years old and under 3—2 entries:	
First premium, Wm. Brady, Peoria	20 00
Petona Berry; bred by J. A. Gunsted, Philadelphia, Pa.; sire, Imp. Stadmor; dam, ——, by West Australia.	
Second premium, Whitten Bros., Wilmington	10 00
Oakland Grove Rose; sire, Lochiel; dam, Melrose, by Melbourne.	
Mare, 1 year old and under 2—3 entries:	
First premium, Wiley Buckles, Champaign	15 00
Second premium, A. B. Watts, Farmingdale	10 00
Vrenetta; foaled 1880; bred by Peter Vredenburg, Springfield; sire, Voltigeur; dam, Maga, by Imp. Knight St. George.	
Mare colt, under 1 year old—2 entries:	
First premium, A. B. Watts, Farmingdale	15 00
Menetta; foaled, 1881; bred by A. B. Watts, Farmingdale; sire, Voltigeur: dam, Fanny King, by Big Boston.	
Second premium, Wm. Graff, Ashland	10 00
Bay Filly; foaled May 5, 1881; bred by Wm. Graff, Ashland; sire, Voltigeur: dam, Monetta, by Marmion.	

BREEDING RINGS.

Brood mare, shown with 2 of her colts under 2 years of age—2 entries:	
Premium, Wiley Buckles, Champaign	30 00
Stallion, showing best 5 sucking foals of either sex—1 entry:	
Premium, A. B. Watts, Farmingdale	50 00
Voltigeur.	

Awarding Committee—P. H. Dorsey, Bunker Hill; J. C. Bruner, Ottawa; Peter Donlevy, Ottawa.

LOT 25—THOROUGHBRED—SWEEPSTAKES.

Stallion, of any age, to bridle—6 entries:	
Premium, Wiley Buckles, Champaign	$100 00
Mare, of any age, to bridle—9 entries	
Premium, Wiley Buckles, Champaign	50 00

Awarding Committee—E. Brock, Heyworth; W. L. Sweeny, Rock Island; Austin Baker, Kankakee.

LOT 26—ROADSTERS.

STALLIONS.

Stallion, 4 years old or over, to harness—22 entries:	
First premium, Wm Babcock & Son, Canton	$25 00
George Sprague; foaled May 10, 1875; bred by Wm Babcock, Sr., Canton; sire, Governor Sprague; dam, Jenny Lind, by Good Ike.	
Second premium, Jas. McKean, Bradford	15 00
Captain; sire, Billy Denton; dam, by DeKay's Bellfounder.	
Stallion, 3 years old and under 4, to harness—6 entries:	
First premium, Jas. McKean, Bradford	20 00
Bay Chief; foaled May 12, 1878; sire, Robert McGregor; dam, Lady Mack, by Toronto Chief.	
Second premium, Y. D. Scales, Roodhouse	10 00
Stallion, 2 years old and under 3—10 entries:	
First premium, Robt McMullen, Farmington	20 00
Blayney's Abdallah; foaled April 8, 1878, bred by Robt. McMullen, Farmington; sire, Wide Awake; dam, Bell.	
Second premium, P. H. Dorsey, Bunker Hill	10 00
Small Hopes: bay stallion; sire, Membreno Autocrat; dam, Maggy Gold Dust.	

Stallion, 1 year old and under 2—9 entries:
First premium, Richard R. Voris, Peoria $15 00
Durango Jr.; foaled April 12, 1880; bred by Richard R. Voris, Peoria; sire, Durango; dam, Kitty Bay.
Second premium, Melbourne Stock Farm, Washington 10 00
Titan; foaled May 16, 1880; bred by L. S. Rupert, Washington; sire, Fairy Gift; dam, Restless, by Ky. Clay.

Stallion colt, under 1 year old—16 entries:
First premium, John McMillon, Clinton 15 00
Second premium, Andrew Armstrong, Beason 10 00
Un-named; foaled April, 1881; bred by A. Armstrong, Beason; sire, Abdallah Jr.

MARES.

Mare, 4 years old or over, to harness—14 entries:
First premium, M. Higby, Canton 25 00
Kate Sprague; foaled April 22, 1875; bred by Wm. Babcock, Sr., Canton; sire, Governor Sprague; dam, Tim, by Lance.
Second premium, Geo. S. Hanna, Bloomington 15 00

Mare, 3 years old and under 4, to harness—8 entries:
First premium, Van Meter & Pratt, Atlanta 20 00
Sara B.; foaled May 1, 1878, bred by Ed. R. Van Meter, Atlanta; sire, Hailstorm; dam, Indian.
Second premium, W. E. Ashlock, Carrollton 10 00
Kitty Walker; sire, Kilburn Jim. Jr.; dam, by Honest John.

Mare, 2 years old and under 3—2 entries:
First premium, Conover & Crum, Little Indian 20 00
——, foaled May 1, 1879; bred by J. M. Stribling, Virginia; sire, Messenger Gold Dust; dam, Puss Gray.
Second premium, J. P. McQuaid, Canton 10 00
Silver Leaf; foaled June 22, 1879; sire, Geo. Higbee; dam, Clay Trustee.

Mare, 1 year old and under 2—5 entries
First premium, Wm. Hull, Clear Creek 15 00
Second premium, Andrew Armstrong, Beason 10 00
Jessie; foaled April 11, 1881; bred by A. Armstrong, Beason; sire, Abdallah Jr.; dam, Nellie Wilb, by Col. Wilbur.

Mare colt, under 1 year old—9 entries:
First premium, Van Meter & Pratt, Atlanta 15 00
Rita Mohawk; foaled June 7, 1881; bred by Ed. R. Van Meter; sire, Mohawk Jr.; dam, by Tip Cranston.
Second premium, Andrew Armstrong Beason 10 00
Lady Thornton; foaled April 1, 1881; bred by A. Armstrong, Beason, sire Abdallah Jr.; dam, Nellie Wilbur, by Col. Wilbur.

BREEDING RINGS.

Brood mare, shown with 2 of her colts, 2 years of age—9 entries:
Premium, Melbourne Stock Farm, Washington 30 00
Restless; foaled 1867; bred by Dr. L. Herr, Lexington, Ky.; sire Ky. Clay; dam, by Woodpecker.

Stallion, showing best 5 sucking foals of either sex—4 entries:
Premium, Andrew Armstrong, Beason 50 00
Abdallah Jr.; foaled, 1864; bred by F. K. Hurst, Woodford Co., Ky.; sire, Alexander's Abdallah; dam, by Columbus.

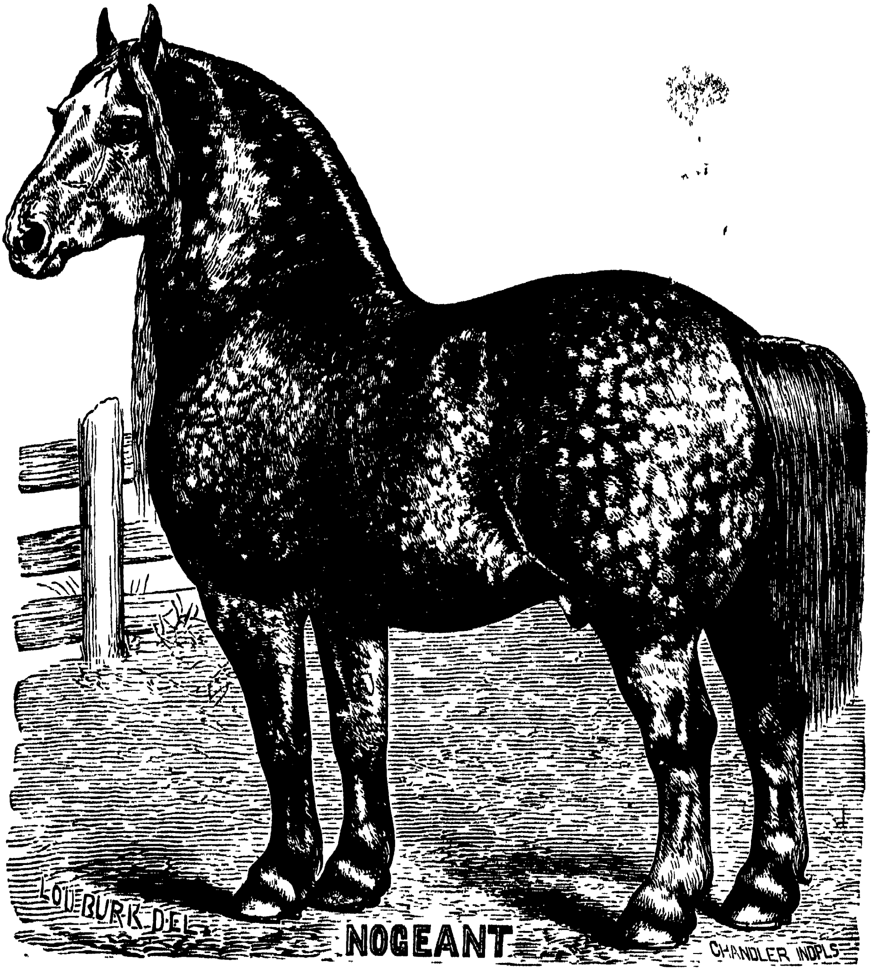
Awarding Committee—Geo. B. Gray, Graymont; M. Givens, Virginia; T. Hunter, Owaneco; L. M. Taylor, Monticello; J. H. Pickrell, Harristown; J. Tabor Mathers, Jacksonville.

LOT 27—ROADSTERS—SWEEPSTAKES.

Stallion of any age, to harness—28 entries:
Premium, Wm. Babcock & Son, Canton $100 00
George Sprague.

Mare of any age, to harness—17 entries:
Premium, M. Higby, Canton 50 00
Kate Sprague.

Awarding Committee—J. H. Pickrell, Harristown; J. Tabor Mathers, Jacksonville; L. M. Taylor, Monticello.



Norman Stallion, Nogeant, exhibited by E. Dillon & Co., Bloomington, Ill. Awarded Sweepstakes Premium, State Fair, 1881.—p 39.

LOT 28—FRENCH DRAFT HORSES.

Percheron, Norman and other French Draft breeds—Imported or Full Blood.

STALLIONS.

Stallion 4 years old or over—11 entries:
First premium, E. Dillon & Co., Bloomington $25 00
Nogeant, Imp. 1877; by E. Dillon & Co., Bloomington.
Second premium, R. H. Baker, Heyworth 15 00
Advance; Imported.

Stallion, 3 years old and under 4—8 entries:
First premium, John Virgin, Fairbury 20 00
Roi DeBoulogne; foaled June 1878; Imp. September 5, 1881.
Second premium, E. Dillon & Co., Bloomington.
Pindus; Imp., by E. Dillon & Co., Bloomington, August, 1881.

Stallion 2 years old and under 3—4 entries:
First premium E. Dillon & Co., Bloomington 20 00
Au Fait; Imp., by E. Dillon & Co., Bloomington, August, 1881.
Second premium, E. Dillon & Co., Bloomington 10 00
Chimborazo; Imp., by E. Dillon. & Co., Bloomington, August, 1881.

Stallion, 1 year old and under 2—2 entries:
First premium, E. Dillon & Co., Bloomington 15 00
Quivive; Imp., by E. Dillon & Co., Bloomington, August, 1881.
Second premium, E. Dillon & Co., Bloomington 10 00
Beau Monde; Imp., by E. Dillon & Co., Bloomington, August, 1881.

MARES.

Mare, 4 years old or over—3 entries:
First premium, E Dillon & Co., Bloomington 25 00
Modesty, Imp. 1875, by E Dillon & Co., Bloomington.
Second premium, E Dillon & Co., Bloomington 15 00
Bouquet, Imp. 1875 by E. Dillon & Co., Bloomington.

Mare, 3 years old and under 4—2 entries:
First premium, E. Dillon & Co., Bloomington 20 00
Maid of Orleans, Imp. 1875 by E. Dillon & Co., Bloomington.
Second premium, E. Dillon & Co., Bloomington 10 00
Rosette; sire, St. Laurent, Imp.; dam, Rose of France.

Mare, 2 years old and under 3—2 entries:
First premium, E. Dillon & Co., Bloomington 20 00
Pearl; Imp. by E. Dillon & Co., Bloomington, August, 1881.
Second premium, E. Dillon & Co., Bloomington 10 00
A'la Mode; Imp. by E. Dillon & C., Bloomington, August, 1881.

Mare, 1 year old and under 2—1 entry:
First premium, E. Dillon & Co., Bloomington 15 00
Chicory; Imp. by E. Dillon & Co., Bloomington, August, 1881.

Mare colt under 1 year old—1 entry:
First premium, E. D. Fuller, Tremont 15 00
French Fanny. Imp. by E. Dillon & Co., Bloomington, August, 1881.

BREEDING RING.

Stallion showing best five sucking foals of either sex—1 entry.
Premium, E. D. Fuller, Tremont 50 00
Richard Cœur de Leon; Imp. in 1872 by E. D. Fuller, Tremont.

Awarding Committee—Henry Colwell, Duncan; John B. Ricks, Taylorville; John W Hunter, Owaneco.

LOT 29—FRENCH DRAFT HORSES—SWEEPSTAKES.

Stallion of any age, to bridle—22 entries:
Premium, E. Dillon & Co., Bloomington $100 00
Nogeant.

Mare of any age, to bridle—11 entries:
Premium, E. Dillon & Co., Bloomington 50 00
Modesty.

Awarding Committee—John B. Ricks, Taylorville; W. L. Sweeney, Rock Island; Austin Baker, Kankakee.

LOT 30—ENGLISH DRAFT HORSES.

Clydesdale and other English Draft Breeds—Imported or Full Blood.

STALLIONS.

Stallion 4 years old or over—10 entries:
First premium, H. W. Gove & Co., Washington .... [illegible]
Ben Nevis, No. 1060, foaled 1875; bred by W. Rames, Kempton Farms, Scotland; sire, Matchem, 1218; dam, Darling, by General Williams, 326.
Second premium, J. S. Busey, Champaign 15 00
General; 1st Vol. Eng. Stud Book, [illegible]; foaled May 6, 1874; sire, Lord Derby, 485; dam, Keir Mare, Princess.

Stallion, 3 years old and under 4—6 entries:
First premium, Robert Holloway, Alexis 20 00
Drumpelia.
Second premium, H. W. Gove & Co., Washington 10 00
Better Times; foaled 1878; bred by James Clay, Buckingham Hall, Nottinghamshire; sire, Duke of Wellington, 2325, Vol. 1; dam Flora, by Heart of Oak, 1006.

Stallion 2 years old and under 3—7 entries.
First premium, H. W. Gove & Co., Washington 20 00
Sampson, foaled 1879; bred by Wm. Shaw, Thornton, Poulton-le-Fylde, Lancashire, Eng.; sire, What's Wanted; dam, Nancy, by Leicester.
Second premium, Robt. Holloway, Alexis 10 00
Lord of Galloway.

Stallion, 1 year old and under 2—6 entries:
First premium, Robt. Holloway, Alexis 15 00
Buchanan.
Second premium, J. J. Worden, Swan Creek 10 00
Young Donald Dinnie; foaled March 28, 1880; bred by J. J. Worden, Swan Creek; sire, Old Donald Dinnie; dam, Maggie May.

Stallion colt under 1 year old—1 entry:
First premium, Robert Holloway, Alexis 15 00
Duke of Athol.

MARES.

Mare, 4 years old or over—5 entries:
First premium, Robt. Holloway, Alexis 25 00
Lady Mary.
Second premium, Robt. Holloway, Alexis 15 00
Jessie Crawford.

Mare, 3 years old and under 4—4 entries:
First premium, Robt. Holloway, Alexis 20 00
Wigton Lassie.
Second premium, Robert Holloway, Alexis 10 00
Rose of Kenil.

Mare, 2 years old and under 3—4 entries:
First premium, Robt. Holloway, Alexis 20 00
Jessie Wilson.
Second premium, Robt. Holloway, Alexis 10 00
Nancy Lee.

Mare, 1 year old and under 2—2 entries:
First premium, Robt. Holloway, Alexis 15 00
Damsel.
Second premium, J. J. Worden, Swan Creek 10 00
Queen of the Prairie; foaled September 5, 1880; bred by J. J. Worden, Swan Creek; sire, Pride of the West; dam, Queen of Oak.

BREEDING RING

Brood mare, shown with two of her colts under 2 years of age—1 entry:
Premium, Robt. Holloway, Alexis 30 00
Princess of Wales.

Awarding Committee—Henry Caldwell, Delavan; J. W. Hunter, Owaneco; R. B. Stevenson, Little Indian.

Clydesdale Stallion, Nubian, exhibited by Edward Hodgson, El Paso, Ill. Awarded Sweepstakes Premium, State Fair, 1881.—p 41

LOT 31—ENGLISH DRAFT HORSES—SWEEPSTAKES.

Stallion of any age to bridle—24 entries:

Premium, Ed. Hodson, ElPaso	$100 00
Nubian; foaled 1876; Imp. Nov. 1880, by Powell Bros.; sire, Ivanhoe (396); dam, by Campsie, 119.	

Mare of any age, to bridle—18 entries:

Premium, Robert Holloway, Alexis	50 00
Jessie Crawford'	

Awarding Committee—H. Babcock, Onarga; J. L. Owens, Mokena; C. Dawson, Lexington.

LOT 32—DRAFT TEAM.

Team draft horses, pair of mares, or pair of geldings, shown to farm wagon—6 entries:

First premium, E Dillon & Co., Bloomington	$40 00
Second premium, W. H. Ross, Bloomington	20 00

Awarding Committee—John B. Ricks, Taylorville; Henry Caldwell, Delavan; J. W. Hunter, Owaneco.

LOT 33—HORSES FOR AGRICULTURAL PURPOSES.

Stallion, 4 years old or over—20 entries:

First premium, A. G. Maple, Mapleton	$25 00
Second premium, John Sharick, Metamora	15 00

Stallion, 3 years old and under 4—5 entries:

First premium, J. P. & D. Fisher, Goderich, Canada	20 00
Second premium, C. H. Huggins, Gilson	10 00

Stallion, 2 years old and under 3—15 entries:

First premium, Andrew Turner, Atlanta	20 00
Second premium, C. H. Huggins, Gilson	10 00

Stallion, 1 year old and under 2—8 entries:

First premium, Ed. Hodson, El Paso	15 00
Second premium, E. D. Fuller, Tremont	10 00

Stallion colt, under 1 year old—11 entries·

First premium, Andrew Armstrong, Beason	15 00
Second premium, Andrew Turner, Atlanta	10 00

MARES.

Mare, 4 years old or over—12 entries:

First premium, Ed. Hodson, El Paso	25 00
Second premium. J. R. Clayton, Wyoming	15 00

Mare, 3 years old and under 4—7 entries·

First premium, J. N. Cline, Cantrall	20 00
Second premium, E. Dillon & Co., Bloomington	10 00

Mare, 2 years old and under 3—7 entries;

First premium, E. D. Fuller, Tremont	20 00
Second premium, E. D. Fuller, Tremont	10 00

Mare, 1 year old and under 2—3 entries.

First premium, Ed. Hodson, El Paso	15 00
Second premium, Ed. Hodson, El Paso	10 00

Mare colt, under 1 year old—6 entries·

First premium, Ed. Hodson, El Paso	15 00
Second premium, E. D. Fuller, Tremont	10 00

BREEDING RING.

Brood mare, shown with two of her colts under 2 years of age—5 entries:

Premium, Ed. Hodson, El Paso	30 00

Awarding Committee—A. B. Swisher, Eliza; W. C. McLeod, Macomb; Arthur J. Caton, Chicago.

LOT 34—HORSES FOR AGRICULTURAL PURPOSES—SWEEPSTAKES.

Stallion of any age, to bridle—47 entries:	
Premium, James McKean, Bradford	$100 00
Mare of any age, to bridle—24 entries:	
Premium, J. R. Clayton, Wyoming	50 00

Awarding Committee—Thornton Hunter, Owaneco; Austin Baker, Kankakee; J. Tabor Mathers, Jacksonville.

LOT 35—SADDLE HORSES.

STALLIONS.

Saddle stallion, 4 years old or over—3 entries:	
First premium, Geo. W. Chatterton, Jr., Springfield	$20 00
Second premium, Jno. A. Richmond, Mackinaw	10 00
Saddle stallion, under 4 years old—1 entry:	
First premium, Geo. Dunlap, Bloomington	20 00

MARES.

Saddle mare, 4 years old or over—3 entries:	
First premium, R. G. Bright, Normal	20 00
Second premium, Ed. Hodson, El Paso	10 00
Saddle mare, under 4 years old—1 entry:	
First premium, Vance & Oliver, Virginia	20 00

GELDINGS.

Saddle gelding, 4 years old or over—6 entries	
First premium, Wm. Stevenson & Son, Little Indian	20 00
Second premium, J. H. Trout, Tremont	10 00
Saddle gelding, under 4 years old—1 entry:	
First premium, Conover & Crum, Little Indian	20 00

Awarding Committee—J. Tabor Mathers, Jacksonville; W. C. McLeod, Macomb; Geo. Pickrell, Wheatfield.

LOT 36—CARRIAGE HORSES.

Carriage team, shown to carriage buggy—7 entries:	
First premium, Conover & Crum, Little Indian	$40 00
Second premium, James Holmes, Toulon	20 00
Family mare or gelding, driven to buggy—8 entries:	
First premium, Vance & Oliver, Virginia	20 00
Second premium, Conover & Crum, Little Indian	10 00

Awarding Committee—J. T. Stribling, Virginia; Geo. Pickrell, Wheatfield; J. Tabor Mathers, Jacksonville.

LOT 37—GENTLEMEN'S DRIVING HORSES.

Pair of mares, to pole—9 entries	
First premium, James McKean, Bradford	$40 00
Second premium, J. N. Leeper, Farmington	20 00
Pair of geldings, to pole—4 entries:	
First premium, Caton Stock Farm, Joliet	40 00
Second premium, Conover & Crum, Virginia	20 00
Single stallion, to harness—12 entries:	
First premium, L. S. Rupert & Co., Washington	40 00
Second premium, Thos. L. Dixon, Farmington	20 00
Single mare, to harness—14 entries:	
First premium, L. S. Rupert & Co., Washington	30 00
Second premium, Daniel White, Trivoli	15 00

Single gelding, to harness—11 entries:

First premium, Caton Stock Farm, Joliet	$30 00
Second premium, J. G. Corbett, Princeville	15 00

Awarding Committee—W. J. Neely, Ottawa; E. L. Cronkrite, Freeport; H. J. Vaughan, Woodhull.

LOT 38—JACKS, JENNETS AND MULES.

JACKS.

Jack, 4 years old or over—2 entries:

First premium, Augustein & Cooper, Cooper	$25 00
Second premium, J. N. Leeper, Farmington	15 00

MULES.

Mule, 3 years old or over—6 entries:

First premium, Ed. S. Coolidge, Brimfield	15 00
Second premium, Ed. S. Coolidge, Brimfield	10 00

One year old mule—1 entry:

First premium, Thomas May, Lewiston	15 00

Sucking mule—4 entries:

First premium, Benj. Negley, Farmington	10 00
Second premium, John Craig, Farmington	5 00

Awarding Committee—John Virgin, Fairbury; J. W. Ramsey, Jacksonville; J. L. Owen, Mokena.

LOT 39—JACKS, JENNETS AND MULES—SWEEPSTAKES.

Jack of any age, shown with not less than 3 mules of his get—1 entry.

Premium, J. N. Leeper, Farmington	$50 00

Team of mules, 3 years old or over, shown to farm wagon—3 entries:

First premium, Ed. S. Coolidge, Brimfield	25 00
Second premium, Tilford Rice, Lenox	15 00

Awarding Committee—John Virgin, Fairbury; J. W. Ramsey, Jacksonville; J. L. Owen, Mokena.

LOT 40—EQUESTRIANISM—BOYS' RIDING.

Boy not over 14 years old, displaying best horsemanship in the saddle—7 entries:

First premium, W. T. Dowdall, Peoria	$10 00
Second premium, Craig McQuaid, Canton	5 00
Third premium, Andrew Armstrong, Beason	3 00
Fourth premium, Wm. Cress, Washington	2 00
Fifth premium, Lester E. Hodson, El Paso	1 00

Awarding Committee—John Thomas, Lincoln; J. H. Potts, Jacksonville.

CLASS C—SHEEP.

E. B. DAVID, *Superintendent.*

PURE BRED LONG WOOLS.

LOT 41—COTSWOLDS.

RAMS.

Ram, 2 years old or over—8 entries:

First premium, W. L. Scott, Scott Station, Ky.	20 00
Second premium, H. & O. Sorby, Guelph, Canada	10 00

Billy; bred by Ontario School of Agriculture, Guelph, Ca.; sire, Imp. Lane Ram; dam, Imp. Ewe.

Ram, 1 year old and under 2—10 entries:
First premium, W. L. Scott, Scott Station, Ky........ $15 00
Second premium, H. & O. Sorby, Guelph, Canada........ 10 00
Russell Swanwick; bred by Russell Swanwick, Guelph, Ca.; sire, Imp. Ram; dam, Imp. Ewe.

Ram lamb under 1 year old—9 entries:
First premium, Abner Strawn, Ottawa........ 10 00
——; dropped February, 1881; bred by Thomas Porter, Hollewell Burford, Oxfordshire, Eng.; imported August, 1881, by Strawn & Johnston.
Second premium, H. & O. Sorby, Guelph, Canada........ 5 00
——; bred by H. Sorby, Guelph, Ca.; sire, Billy; dam, Imp. Ewe.

EWES.

Ewe, 2 years old or over—11 entries:
First premium, Morgan & Cotton, Camargo........ 20 00
——; dropped March 27, 1879; bred by Morgan & Cotton, Camargo; sire, Cotswold Ram; dam, Cotswold Ewe.
Second premium, W. L. Scott, Scott Station, Ky........ 10 00

Ewe, 1 year old and under 2—20 entries:
First premium, Morgan & Cotton, Camargo........ 15 00
——; dropped March 2, 1880; bred by J. Ward, Brampton Court, Herefordshire, Eng.; sire, Cotswold Ram; dam, Cotswold Ewe.
Second premium, Abner Strawn, Ottawa........ 10 00
——; dropped March, 1880; bred by T. & S. G. Gillett, Kilkenny, Oxfordshire, Eng.; imported by Strawn & Johnston.

Ewe lamb under 1 year old—8 entries:
First premium, Frank Willson, Jackson, Mich........ 10 00
——; dropped March, 1881; bred by Jos. Snell, Ontario; sire, Cotswold Ram; dam, Cotswold Ewe.
Second premium, Abner Strawn, Ottawa........ 5 00
——; dropped March, 1881; bred by Henry Akers, Black Burton, Farmingdon, Oxfordshire, Eng.; imported by Strawn & Johnston.

Awarding Committee—Jacob S. Pruett, Brooklyn; J. R. Megginson, Jacksonville; Joseph Reinhardt, Granville.

LOT 42—COTSWOLDS—SWEEPSTAKES.

Ram of any age—11 entries.
Premium, Abner Strawn, Ottawa........ $20 00
——, dropped February, 1881; bred by Thomas Porter, Hollewell Burford, Oxfordshire, Eng., imported by Strawn & Johnston.

Ewe of any age—17 entries:
Premium, Morgan & Cotton, Camargo........ 15 00

Ram and 5 ewes over 2 years old—2 entries:
Premium, Abner Strawn, Ottawa........ 20 00

Ram, with 5 of his get under 2 years old, of either sex, owned and bred by exhibiter —3 entries.
Premium, H. & O. Sorby, Guelph, Canada........ 20 00
Billy.

Awarding Committee—M. D. Hauberg, Port Byron; Fenwick Anderson, Ohio; Andrew Oliver, Elmira.

LOT 43—LEICESTER OR LINCOLN.

RAMS.

Ram, 2 years old or over—2 entries.
First premium, D. C. Graham, Cameron........ $20 00
Second premium, D. C. Graham, Cameron........ 10 00

Ram, 1 year old and under 2—4 entries:
First premium, D. C. Graham, Cameron........ 15 00
Second premium, W. L. Scott, Scott Station, Ky........ 10 00

Ram lamb under 1 year old—4 entries:
First premium, D. C. Graham, Cameron........ 10 00
Second premium, D C. Graham, Cameron........ 5 00

EWES.

Ewe, 2 years old or over—4 entries:
First premium, M. C. Brownlee, Monmouth........ 20 00
Second premium, D. C. Graham, Cameron........ 10 00

Ewe, 1 year old and under 2—5 entries:	
First premium, D. C. Graham, Cameron	$15 00
Second premium, D. C. Graham, Cameron	10 00
Ewe lamb, under 1 year old—3 entries:	
First premium, D. C. Graham, Cameron	10 00
Second premium, D. C. Graham, Cameron	5 00

Awarding Committee—J. L. S. DeVault, La Rose; Lott Scofield, Newark; Robt. Anderson, Polo.

LOT 44—LEICESTER OR LINCOLN—SWEEPSTAKES.

Ram, of any age—6 entries:	
Premium, D. C. Graham, Cameron	$20 00
Ewe, of any age—7 entries:	
Premium, W. L. Scott, Scott Station, Ky	15 00
Ram and 5 ewes, over 2 years old—2 entries:	
Premium, D. C. Graham, Cameron	20 00
Ram, with 5 of his get, under 2 years old, of either sex, owned and bred by exhibiter—1 entry:	
Premium, D. C. Graham, Cameron	20 00

Awarding Committee—Jacob S. Pruett, Brooklyn; Jno. R. Megginson, Jacksonville; Jos. Reinhardt, Granville.

LOT 45—PURE BRED MIDDLE WOOLS—SOUTHDOWNS.

RAMS.

Ram, 2 years old or over—4 entries:	
First premium, H. & O. Sorby, Guelph, Canada	$20 00
Second premium, J. H. Potts & Son, Jacksonville	10 00
Ram, 1 year old and under 2—3 entries:	
First premium, H. & O. Sorby, Guelph, Canada	15 00
Second premium, H. & O. Sorby, Guelph, Canada	10 00
Ram lamb, under 1 year old—3 entries:	
First premium, J. H. Potts & Son, Jacksonville	10 00
Second premium—None awarded.	

EWES.

Ewe, 2 years old or over—4 entries:	
First premium, J. H. Potts & Son, Jacksonville	20 00
Second premium, J. H. Potts & Son, Jacksonville	10 00
Ewe, 1 year old and under 2—5 entries:	
First premium, H. & O. Sorby, Guelph, Canada	15 00
Second premium, H. & O. Sorby, Guelph, Canada	10 00
Ewe lamb, under 1 year old—2 entries:	
First premium, J. H. Potts & Son, Jacksonville	10 00
Second premium, J. H. Potts & Son, Jacksonville	5 00

Awarding Committee—D. Calhoun, Keithsburg; J. L. S. DeVault, La Rose; John Turnbull, Elmira.

LOT 46—SOUTHDOWNS—SWEEPSTAKES.

Ram, of any age—4 entries:	
Premium, J. H. Potts & Son, Jacksonville	$20 00
Ewe, of any age—4 entries:	
Premium, J. H. Potts & Son, Jacksonville	15 00
Ram and 5 ewes, over 2 years old—1 entry:	
Premium, J. H. Potts & Son, Jacksonville	20 00
Ram, with 5 of his get, under 2 years old, of either sex, owned and bred by exhibiter—2 entries:	
Premium, J. H. Potts & Son, Jacksonville	20 00

Awarding Committee—Jos. Reinhardt, Granville; Jacob S. Pruett, Brooklyn; J. R. Megginson, Jacksonville.

LOT 47—SHROPSHIREDOWNS, HAMPSHIREDOWNS AND OTHER PURE BRED MIDDLE WOOLS.

RAMS.

Ram, 2 years old or over—6 entries:	
First premium, Cooper, Maddox & Co., Reading, O	$20 00
Second premium, Cooper, Maddox & Co., Reading, O	10 00
Ram, 1 year old and under 2—6 entries:	
First premium, Morgan & Cotton, Camargo	15 00
Second premium, Cooper, Maddox & Co., Reading, O	10 00
Ram lamb, under 1 year old—6 entries:	
First premium, Cooper, Maddox & Co., Reading, O	10 00
Second premium, Cooper, Maddox & Co., Reading, O	5 00

EWES.

Ewe, 2 years old or over—7 entries:	
First premium, Morgan & Cotton, Camargo	20 00
Second premium, Cooper, Maddox & Co., Reading, O	10 00
Ewe, 1 year old and under 2—12 entries:	
First premium, Cooper, Maddox & Co., Reading, O	15 00
Second premium, Cooper, Maddox & Co., Reading, O	10 00
Ewe lamb, under 1 year old—5 entries:	
First premium, Cooper, Maddox & Co., Reading, O	10 00
Second premium, Cooper, Maddox & Co., Reading, O	5 00

Awarding Committee—David Calhoun, Keithsburg; J. L. S. DeVault, La Rose; John Turnbull, Elmira.

LOT 48—SHROPSHIREDOWN, ETC.—SWEEPSTAKES.

Ram, of any age—7 entries	
Premium, Cooper, Maddox & Co., Reading, O	$20 00
Ewe, of any age—9 entries	
Premium, Cooper, Maddox & Co., Reading, O	15 00
Ram and 5 ewes, over 2 years old—2 entries:	
Premium, Cooper, Maddox & Co., Reading, O	20 00
Ram, with 5 of his get, under 2 years old, of either sex, owned and bred by the exhibiter—1 entry:	
Premium, Morgan & Cotton, Camargo	20 00

Awarding Committee—J. R. Megginson, Jacksonville; Jacob S. Pruett, Brooklyn; Jos. Reinhardt, Granville.

PURE BRED FINE WOOLS.

LOT 49—AMERICAN MERINO.

RAMS.

Ram, 2 years old or over—9 entries:	
First premium, Robert Perrine, Patterson Mills, Pa	$20 00
Smuggler, 182; dropped March, 1878; bred by Robert Perrine, Patterson Mills, Pa.; sire, Comet No. 35; dam, No. 195.	
Second premium, Perrine & Brownlee, Monmouth	10 00
Big Hammond No 490; dropped March, 1878; bred by Robert Perrine, Patterson Mills, Pa.; sire, Little Hammond, No. 36; dam, No. 137.	
Ram, 1 year old and under 2—8 entries:	
First premium, F. E. Day, Streator	15 00
Agitator; dropped April, 1880; bred by F. E. Day, Streator; sire, Greasey; dam,	
Second premium, G. W. McFadden & Bro., Atlanta	10 00
Ram lamb, under 1 year old—7 entries.	
First premium, G. W. McFadden & Bro., Atlanta	10 00
Second premium, G. W. McFadden & Bro., Atlanta	5 00

EWES.

Ewe, 2 years old or over—15 entries:

First premium, F. E. Day, Streator	$20 00
Favorite; dropped April, 1878; bred by F. E. Day, Streator; sire, Marshall; dam, Old Wrinkly Ewe.	
Second premium, G. W. McFadden & Bro., Atlanta	10 00

Ewe, 1 year old and under 2—11 entries:

First premium, G. W. McFadden & Bro., Atlanta	15 00
Second premium, G. W. McFadden & Bro., Atlanta	10 00

Ewe lamb, under 1 year old—10 entries:

First premium, F. E. Day, Streator	10 00
Beauty; dropped April, 1881; bred by F. E. Day, Streator; sire, Clay; dam, Flora.	
Second premium, F. E. Day, Streator	5 00
Ruby; dropped April, 1881; bred by F. E. Day, Streator, sire, Clay; dam, Grace.	

Awarding Committee—John Turnbull, Elmira; J. H. Jones, Milford; Joseph Wood, Albion.

LOT 50—AMERICAN MERINO—SWEEPSTAKES.

Ram of any age—13 entries:

Premium, Robert Perrine, Patterson Mills, Pa	$20 00
Smuggler.	

Ewe of any age—14 entries:

Premium, F. E. Day, Streator	15 00
Black Eye; dropped March, 1878; bred by F. E. Day, Streator; sire, Marshall; dam, Old Greasy Ewe.	

Ram and 5 ewes, over 2 years old—4 entries:

Premium, F. E. Day, Streator	20 00

Ram with 5 of his get, under 2 years old, of either sex, owned and bred by the exhibitor—3 entries:

Premium, Taylor Bros., Waynesville	20 00

Awarding Committee—David Calhoun, Keithsburg; Lott Scofield, Newark; A. W. Strong, Naperville.

LOT 51—FRENCH MERINO, SILESIAN MERINO AND OTHER PURE BRED FINE WOOLS.

RAMS.

Ram, 2 years old or over—2 entries:

First premium, M. C. Brownlee, Monmouth	$20 00
Second premium, M. C. Brownlee Monmounth	10 00

Ram, 1 year old and under 2—2 entries

First premium—None awarded.	
Second premium, Taylor Bros., Waynesville	10 00

Ram lamb, under 1 year old—2 entries.

First premium, M. C. Brownlee, Monmouth	10 00
Second premium, Taylor Bros., Waynesville	5 00

EWES.

Ewe, 2 years old or over—3 entries.

First premium, M. C. Brownlee, Monmouth	20 00
Second premium, M. C. Brownlee, Monmouth	10 00

Ewe, 1 year old and under 2—2 entries:

First premium, Taylor Bros., Waynesville	15 00
Second premium, M. C. Brownlee, Monmouth	10 00

Ewe lamb, under 1 year old—2 entries:

First premium—None awarded.	
Second premium, M. C. Brownlee, Monmouth	5 00

Awarding Committee—Lott Scofield, Newark; W. K. Dunlap, Dunlap; Joseph Wood, Albion.

LOT 52—FRENCH MERINO, ETC.—SWEEPSTAKES.

Ram of any age—4 entries:

Premium, M. C. Brownlee, Monmouth	20 00

Ewe of any age—3 entries:
Premium, M. C. Brownlee, Monmouth.. $15 00

Ram and 5 ewes, over 2 years old—1 entry:
Premium, M. C. Brownlee, Monmouth.. 20 00

Ram, with 5 of his get, under 2 years old, of either sex, owned and bred by the exhibiter—1 entry:
Premium, M. C. Brownlee, Monmouth.. 20 00

Awarding Committee—David Calhoun, Keithsburg; Lott Scofield, Newark; A. W. Strong, Naperville.

LOT 53—FLEECES.

LONG WOOL.

Fleece, from sheep under 2 years old—1 entry:
Premium, Abner Strawn, Ottawa.. Silver Medal

MIDDLE WOOL

Twelve months' fleece from sheep over 2 years old—1 entry:
Premium, Taylor Bros., Waynesville.. Silver Medal

FINE WOOL.

Twelve months' fleece from sheep over 2 years old—2 entries:
Premium, M. C. Brownlee, Monmouth.. Silver Medal

Fleece from sheep under 2 years old—2 entries:
Premium, Taylor Bros., Waynesville.. Silver Medal

Awarding Committee—James Cotton, Camargo; J. L. S. Devault, LaRose; Lyman Andrews, Centralia.

CLASS D—SWINE.

DAVID GORE, *Superintendent*.

LOT 54—BERKSHIRES.

BOARS.

Boar, 2 years old or over—7 entries:
First premium, A. M. Fulford, Bel Air, Md.. $20 00
Sterling Value; farrowed June 12, 1879; bred by Heber Humfrey, Shrivenham, Eng.; sire, Devonshire Lane; dam, Ulster Lassie.
Second premium, A. & J. Dorsey, Perry.. 10 00

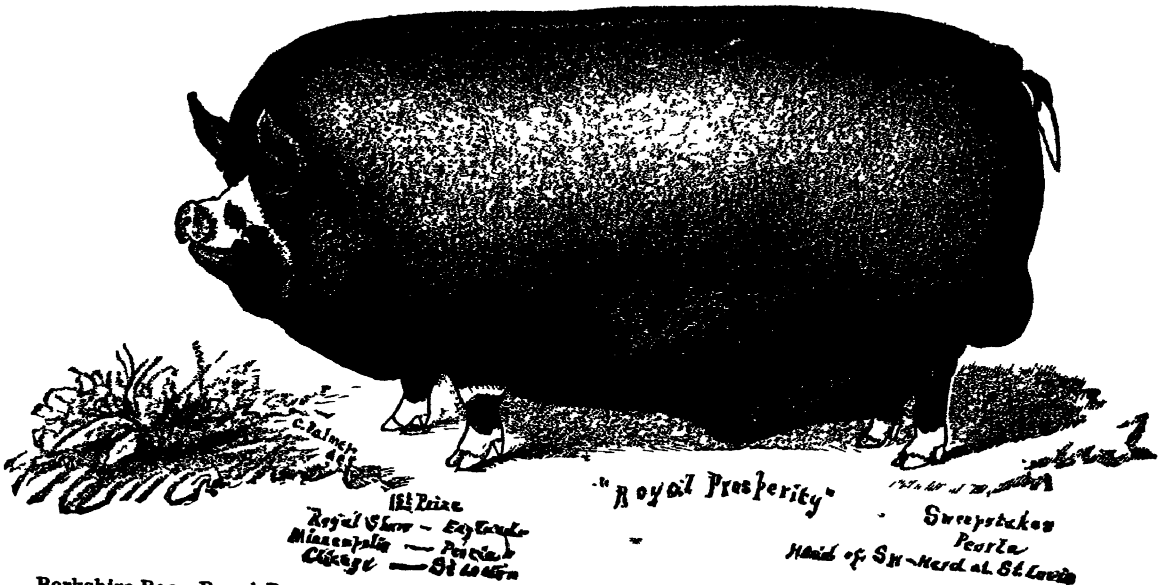
Boar, 1 year old and under 2—8 entries:
First premium, A. M. Fulford, Bel Air, Md.. 20 00
Royal Prosperity; farrowed October 2, 1879; bred by R. Swannick, Cirencester, Eng.; sire, Gloucester 1st; dam, Sister of Lady Bath.

Second premium, A. M. Fulford, Bel Air, Md.. 10 00
Parole; farrowed June 30, 1880; bred by A. M. Fulford, Bel Air, Md.; sire, Robin Hood 3d, 2117; dam, Comptona, 6508.

Boar, under 1 year old—19 entries:
First premium, H. & O. Sorby, Guelph, Canada.. 15 00
——; farrowed April 15, 1881; bred by H. Sorby, Guelph, Canada; sire, Lord Wellington, 3317; dam, Princess Louise, 6612.
Second premium, J. W. Ramsey, Jacksonville.. 10 00
Royal Chieftain, farrowed April 4, 1881; bred by J. W. Ramsey, Jacksonville; sire, Disraeli, 813; dam, Orianna, 3504.

SOWS

Sow, 2 years old or over—8 entries:
First premium, Taylor Bros., Waynesville.. 20 00
Emma VII, 7460; farrowed June 4, 1878; bred by A. Ware, Washington, O.; sire, Duke of Glendale, 2461; dam, Emma V, 4006.
Second premium, A. & J. Dorsey, Perry.. 10 00



Berkshire Boar, Royal Prosperity, exhibited by A. M. FULFORD. Bel Air, Md. Awarded Sweepstakes Premium State Fair, 1881.—p 49.

Sow, 1 year old and under 2—18 entries:

First premium, A. M. Fulford Bel Air, Md	$20 00
Fannie Hood, 6510; farrowed October 17, 1879; bred by W. C. Norton, Aldenville, Pa.; sire, Bob Hood, 2079; dam, Lady Hood 2d, 4528.	
Second premium, J. W. Boston, Jacksonville	10 00
Pat's Beauty; farrowed April 7, 1880; bred by J. W. Boston, Jacksonville; sire, Legal Smithereen, 2813; dam, Victoria 3d, 1390.	

Sow, under 1 year old—20 entries:

First premium, H. & O. Sorby, Guelph Canada	15 00
——, farrowed April 15, 1881; bred by H. Sorby, Guelph; sire, Lord Wellington, 3317; dam, Princess Louise, 6612.	
Second premium, J. W. Boston, Jacksonville	10 00
Bob Hood's Son; farrowed October 20, 1880; bred by A. J. Lovejoy, Jacksonville; sire, Bob Hood, 2079; dam, Lady Compton II.	

BREEDERS' RINGS.

Sow, with litter of her own pigs, not less than 5 under 6 months old—9 entries:

First premium, A. & J. Dorsey, Perry	20 00
Second premium, J. C. Darnell, Elmwood	10 00
Queen Victoria.	

Pen of breeding hogs—1 boar and 4 sows, over 1 year old, owned by the exhibiter—4 entries :

Premium, J. W. Boston, Jacksonville	25 00
Bob Hood; Sally XI's Daughter, Belle Compton, Pat's Beauty, Lilly Lake.	

Five head of swine, of any age, the get of one boar, the sire shown with the pen, and considered in making the award—7 entries :

Premium, A. & J. Dorsey, Perry	20 00

Awarding Committee—S. F. Wilson, Neoga; W. F. Sterling, Aledo; W. E. Goddard, Millersburg; Jacob Weaver, Biggsville; W. N. Beverly, Cerro Gordo.

LOT 55—BERKSHIRES—SWEEPSTAKES.

Boar of any age—19 entries :

Premium, A. M. Fulford, Bel Air, Md	$20 00
Royal Prosperity.	

Sow of any age—22 entries .

Premium, A. M. Fulford, Bel Air, Md	20 00
Fannie Hood, 6510.	

Awarding Committee—Samuel Reed, Lincoln; T. S. Cooper, Coopersburg, Pa.; Geo. N. Dunlap, Bloomington; O. H. Wood, Friendsville; Robert Candor, Aledo.

LOT 56—POLAND CHINA.

BOARS.

Boar, 2 years old or over—4 entries :

First premium, B. R. Cole, Lovington	$20 00
Black Chief; farrowed August 26, 1879; bred by B. R. Cole, Lovington; sire, Black Prince; dam, Lady Clermont.	
Second premium, A. & J. Dorsey, Perry	10 00

Boar, 1 year old and under 2—6 entries :

First premium, J. A. Lawrence, Connorsville, Ind	20 00
Second premium, A. & J. Dorsey, Perry	10 00

Boar, under 1 year old—14 entries .

First premium, Geo. W. McFadden, Atlanta	15 00
Second premium, J. A. Lawrence, Connorsville, Ind	10 00

SOWS.

Sow, 2 years old or over—12 entries ·

First premium, J. A. Lawrence, Connorsville, Ind	20 00
Second premium, Tilford Rice, Lenox	10 00

Sow, 1 year old and under 2—7 entries :

First premium, J. A. Lawrence, Connorsville, Ind	[illegible]
Second premium, A. & J. Dorsey, Perry	10 00

Sow, under 1 year old—19 entries :	
First premium, J. A. Lawrence, Connorsville, Ind	$15 00
Second premium, A. Aiman, Decatur	10 00
Bertie Gold Dust; farrowed October 15, 1880; bred by James T. Russell, Franklin, O.; sire, Illinois Chief, No. 951; dam, Lucy Perfection.	
Sow with litter of her own pigs, not less 5, under 6 months old—6 entries :	
First premium, J. A Lawrence, Connorsville, Ind	20 00
Second premium, J. A. Lawrence, Connorsville, Ind	10 00
Pen of breeding hogs—1 boar and 4 sows, over 1 year old—5 entries :	
Premium, J. A. Lawrence, Connorsville, Ind	25 00
Five head of swine of any age, the get of one boar; the sire shown with the pen, and considered in making the award—4 entries ·	
Premium, J. A. Lawrence, Connorsville, Ind	20 00

Awarding Committee—M. E Newbern, Hennepin; G. D. Henning, Plano; Geo. N. Dunlap, Bloomington; H. C. Castle, Wilmington; Geo. W. Booth, Gardner.

LOT 57—POLAND CHINA—SWEEPSTAKES.

Boar of any age—17 entries :	
Premium, J A. Lawrence, Connorsville, Ind	$20 00
Sow of any age—23 entries ·	
Premium, J. A Lawrenee, Connorsville, Ind.	20 00

Awarding Committee—S. H Swain, Maroa; John Turner, Todd's Point; Hiram Ward, Decatur; Wm. Peterson, Stark; J. Tabor Mathers, Jacksonville.

LOT 58—CHESTER WHITE.

BOARS.

Boar, 2 years old or over—2 entries:	
First premium, A. & J Dorsey, Perry	$20 00
Second premium, Taylor Bros., Waynesville	10 00
Boar 1 year old and under 2—4 entries·	
First premium, A & J Dorsey, Perry	20 00
Second premium, Taylor Bros., Waynesville	10 00
Boar, under 1 year old—10 entries.	
First premium, Taylor Bros., Waynesville	15 00
Second premium, A. & J. Dorsey, Perry	10 00

SOWS.

Sow, 2 years old or over—5 entries:	
First premium, E. Newburn, Hennepin	20 00
Second premium, Taylor Bros., Waynesville	10 00
Sow, 1 year old and under 2—4 entries·	
First premium, Taylor Bros., Waynesville	20 00
Second premium, A & J. Dorsey, Perry	10 00
Sow, under 1 year old—8 entries·	
First premium, Taylor Bros., Waynesville	15 00
Second premium, A. & J. Dorsey, Perry	10 00

BREEDERS' RINGS.

Sow, with litter of her own pigs, not less than 5, under six months old—4 entries·	
First premium, E. Newburn, Hennepin	20 00
Second premium, A. & J. Dorsey, Perry	10 00
Pen of breeding hogs, 1 boar and 4 sows, over 1 year old, owned by the exhibiter—2 entries	
Premium, A. & J. Dorsey, Perry	25 00
Five head of swine, of any age, the get of one boar, the sire shown with the pen, and considered in making the award—3 entries	
Premium, A. & J. Dorsey, Perry	20 00

Awarding Committee—A. B. Nicholson, Lincoln; Samuel Reed, Lincoln; W. E. Barrett, Newton; James W. Boston, Jacksonville; Geo. W. Stoner, LaPlace.

LOT 59—CHESTER WHITE—SWEEPSTAKES.

Boar of any age—9 entries:

Premium, A. & J. Dorsey, Perry	$20 00

Sow of any age—9 entries :

Premium, E. Newbern, Hennepin	20 00

Awarding Committee—S. H. Swain, Maroa; Wm. Peterson, Stark; John Turner, Todd's Point; Hiram Ward, Decatur; J. Tabor Mathers, Jacksonville.

LOT 60—ESSEX.

BOARS.

Boar, 2 years old or over—3 enteries:

First premium, Taylor Bros., Waynesville	$20 00
Second premium, Robert Ball, Hennepin	10 00

Boar, 1 year old and under 2—4 entries.

First premium, Frank Wilson, Jackson, Mich	20 00
Second premium, A. Reed, Jacksonville	10 00

Boar, under 1 year old—5 entries·

First premium, A. Reed, Jacksonville	15 00
Second premium, Taylor Bros., Waynesville	10 00

SOWS.

Sow, 2 years old or over—5 entries:

First premium, A. Reed, Jacksonville	20 00
Second premium, A. Reed, Jacksonville	10 00

Sow, 1 year old and under 2—6 entries

First premium, Robt Ball, Hennepin	20 00
Second premium, A. Reed, Jacksonville	10 00

Sow under 1 year old—7 entries·

First premium, A. Reed, Jacksonville	15 00
Second premium, A. Reed, Jacksonville	10 00

BREEDERS' RINGS.

Sow, with litter of her own pigs, not less than 5, under 6 months old—5 entries .

First premium, A. Reed, Jacksonville	20 00
Second premium, Taylor Bros., Waynesville	10 00

Pen of breeding hogs, 1 boar and 4 sows, over 1 year old, owned by the exhibiter—2 entries :

Premium, A. Reed, Jacksonville	25 00

Five head of swine, of any age, the get of one boar, the sire shown with the pen, and considered in making the award—4 entries:

Premium, Taylor Bros., Waynesville	20 00

Awarding Committee—J. W. Dorsey, Perry; Geo. N. Dunlap, Bloomington; W. E. Barrett, Newton; G. W. Stoner, LaPlace; W. C. Norton, Aldenville, Pa.

LOT. 61—ESSEX—SWEEPSTAKES.

Boar of any age—8 entries :

Premium, A. Reed, Jacksonville	$20 00

Sow of any age—8 entries

Premium, Robt. Ball, Hennepin	20 00

Awarding Committee—Robt. Candor, Aledo; George N. Dunlap, Bloomington; T. S. Cooper, Coopersburg, Pa; Samuel Reed, Lincoln, O. H. Wood, Friendsville.

LOT 62—SMALL YORKSHIRE AND SUFFOLKS.

BOARS.

Boar, 2 years old or over—4 entries ;

First premium, Harris & Norton, Aldenville; Pa King John VI No. 14, S. Y. C. R.; farrowed June 3, 1877; bred by R. M. Hoe, N. Y. City; sire, King John No. 5; dam, Snow-drop No. 8.	20 00
Second premium, Taylor Bros.; Waynesville ——; farrowed October 13, 1878; bred by Frank Willson, Jackson, Mich.; sire, Imp. Snowball; dam, Queen of Michigan.	10 00

Boar, 1 year old and under 2—3 entries :
First premium, Frank Willson, Jackson, Mich $20 00
David; farrowed September 2, 1881; bred by Frank Willson, Jackson, Mich.; sire, Honest John; dam, Molly II.
Second premium, Harris & Norton, Aldenville, Pa 10 00
Success, No. 83 S. Y. C. R., farrowed May 25, 1880; bred by Geo. W. Harris, N. Y. City; sire, King John VI, No. 14; dam, Gand Duchess XV, No. 71.

Boar, under 1 year old—6 entries :
First premium, Harris & Norton, Aldenville, Pa 15 00
Robert; farrowed October 14, 1880; bred by Geo. W. Harris, N. Y. City; sire, Duke of Yorkshire II, No. 19; dam, Queen Bess, No. 11.
Second premium, Harris & Norton, Aldenville, Pa 10 00
Ace of Trumps; farrowed April 11, 1881; bred by Geo. W. Harris, N. Y. City; sire, King John III, No. 12; dam, Grand Duchess, No. 10.

SOWS.

Sow, 2 years old or over—5 entries :
First premium, Harris & Norton, Aldenville, Pa 20 00
Queen Bess II, No. 52, S. Y. C. R.; farrowed August 18, 1877; bred by R. M. Hoe, N. Y. City; sire, King John, No. 5; dam, Queen Bess, No. 11.
Second premium, Taylor Bros., Waynesville 10 00
——; farrowed October 26, 1877; bred by Wm. Smith, Detroit, Mich.; sire, Imp. Snowball; dam, Beauty.

Sow, 1 year old and under 2—5 entries :
First premium, Harris & Norton, Aldenville, Pa 20 00
Diana, No. 167; farrowed May 25, 1880; bred by Geo. W. Harris, N. Y. City; sire, King John VI, No. 14; dam, Grand Duchess XV, No 71.
Second premium, Harris & Norton, Aldenville, Pa 10 00
Diadem, No. 166; farrowed May 25, 1880; bred by Geo. W. Harris, N. Y. City; sire, King John VI, No. 14; dam, Grand Duchess XV, No. 71.

Sow, under 1 year old—9 entries :
First premium, Harris & Norton, Aldenville, Pa 15 00
Queen Bess VI; farrowed October 14, 1880; bred by Geo. W. Harris, N. Y. City; sire, Duke of Yorkshire II, No. 19; dam, Queen Bess, No. 11.
Second premium, Harris & Norton, Aldenville, Pa 10 00
Model Queen V, farrowed October 18, 1880; bred by Geo. W. Harris, N Y. City, sire, Duke of Yorkshire II, No. 19; dam, Model Queen, No. 20.

BREEDERS' RINGS.

Sow, with litter of her own pigs, not less tean 5, under 6 months old—4 entries :
First premium, Harris & Norton, Aldenville, Pa 20 00
Second premium, Frank Willson, Jackson, Mich 10 00

Pen of breeding hogs—1 boar and 4 sows, over 1 year old, owned by the exhibiter—1 entry
Premium, Harris & Norton, Aldenville, Pa 25 00

Five head of swine, of any age, the get of one boar, the sire shown with the pen, and considered in making the award—2 entries :
Premium, Harris & Norton, Aldenville, Pa 20 00

Awarding Committee—Abraham Reid, Jacksonville; Geo. N. Dunlap, Bloomington; J. W. Dorsey, Perry; James W. Boston, Jacksonville.

LOT 63—SMALL YORKSHIRE AND SUFFOLKS—SWEEPSTAKES.

Boar, of any age—5 entries :
Premium, Harris & Norton, Aldenville, Pa $20 00
Robert.

Sow, of any age—8 entries :
Premium, Harris & Norton, Aldenville, Pa 20 00
Queen Bess VI.

Awarding Committee—John Ward, Decatur; Robt. F. Winiterre, Minonk; Jos. Lounes, Table Grove; James W. Boston, Jacksonville; J. A. Lawrence, Connorsville, Ind.

LOT 64—OTHER DISTINCT BREEDS.

Show of swine, of any distinct breed, not named in the premium list, the show including one boar and not less than five sows, of any age—2 entries :
First premium, Geo. W. Stoner, La Place $25 00
Second premium, J. C. Darnell, Elmwood 15 00
"Black Russia."

Awarding Committee—Geo. N. Dunlap, Bloomington; Samuel Reed, Lincoln; Robert Candor, Aledo; O. H. Wood, Friendsville; Frank Willson, Jackson, Mich.

CLASS E—POULTRY.

H. D. EMERY—*Superintendent.*

LOT 65—ASIATIC.

Pair Light Brahmas, fowls—8 entries:	
First premium, J. B. Foot, Norwood Park	$3 00
Second premium, J. H. Leaton, Bloomington	2 00
Pair Light Brahmas, chicks—8 entries:	
First premium, J. H. Butler, Bloomington	3 00
Second premium, J. B. Foot, Norwood Park	2 00
Pair Dark Brahmas, fowls—2 entries:	
First premium, J. H. Leaton, Bloomington	3 00
Second premium, J. H. Leaton, Bloomington	2 00
Pair Buff Cochins, fowls—4 entries:	
First premium, J. B. Foot, Norwood Park	3 00
Second premium, Blenz & Wheelock, Decatur	2 00
Pair Buff Cochins, chicks—3 entries:	
First premium, J. H. Leaton, Bloomington	3 00
Second premium, Blenz & Wheelock, Decatur	2 00
Pair Partridge Cochins, fowls—5 entries	
First premium, G. V. Frink, Bloomington	3 00
Second premium, G. V. Frink, Bloomington	2 00
Pair Partridge Cochins, chicks—5 entries	
First premium, Abraham Reid, Jacksonville	3 00
Second premium, Cary F. Apgar, Peoria	2 00
Pair White Cochins, fowls—2 entries:	
First premium, J. H. Leaton, Bloomington	3 00
Second premium, J. H. Leaton, Bloomington	2 00
Pair White Cochins, chicks—2 entries:	
First premium, J. H. Leaton, Bloomington	3 00
Second premium, J. C. Darnell, Elmwood	2 00
Pair Black Cochins, fowls—3 entries:	
First premium, J. H Leaton, Bloomington	3 00
Second premium, J. C. Darnell, Elmwood	2 00
Pair Black Cochins, chicks—2 entries.	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, J. C. Darnell, Elmwood	2 00

Awarding Committee—S. P. Breed, Princeton; F. M. Benham, Olivet, Mich.; A. J. Ludlam, Atlanta.

LOT 66—DORKING, DOMINIQUE, PLYMOUTH ROCK.

Pair White, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	$3 00
Pair Colored, chicks—2 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair American Dominiques, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Plymouth Rocks, fowls—1 entry	
First premium, J. H. Leaton, Bloomington	3 00
Pair Plymouth Rocks, chicks—5 entries	
First premium, J. H. Leaton, Bloomington	3 00
Second premium, A. G. Bartholomew, Elmwood	2 00

Awarding Committee—D. R. Harrison, Herrin's Prairie; F. S. Adams, El Paso; J. D. Brown, Weldon.

LOT 67—SPANISH.

Pair White Leghorns, fowls—1 entry:	
First premium, Blenz & Wheelock, Decatur	$3 00
Pair White Leghorn, chicks—1 entry:	
First premium, Blenz & Wheelock, Decatur	2 00
Pair Brown Leghorn, chicks—2 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Black Leghorn, chicks—3 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00

Awarding Committee—J. D. Brown, Weldon; F. S. Adams, El Paso; D. R. Harrison, Herrin's Prairie.

LOT 68—HAMBURGS.

Pair Golden-penciled, fowls—1 entry:	
First premium, P. A. Bartlett, Jacksonville	$3 00
Pair Golden-penciled, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Golden-spangled, fowls—2 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Golden-spangled, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Silver-spangled, fowls—1 entry	
First premium, Blenz & Wheelock, Decatur	3 00
Pair Silver-spangled, chicks—2 entries	
First premium, Blenz & Wheelock, Decatur	3 00
Second premium, Blenz & Wheelock, Decatur	2 00
Pair Black, fowls—1 entry.	
First premium, Blenz & Wheelock, Decatur	3 00
Pair Black, chicks—3 entries	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, Blenz & Wheelock, Decatur	2 00

Awarding Committee—J. D. Brown, Weldon; F. S. Adams, El Paso, D. R. Harrison, Herrin's Prairie.

LOT 69—POLISH.

Pair Golden-spangled, fowls—1 entry.	
First premium, Blenz & Wheelock, Decatur	$3 00
Pair Silver-spangled, fowls—1 entry	
First premium, Blenz & Wheelock, Decatur	3 00
Pair White-crested Black, chicks—1 entry:	
First premium, F. M. Benham, Olivet, Mich	3 00
Pair White, chicks—2 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00

Awarding Committee—F. S. Adams, El Paso; J. D. Brown, Weldon, D. R. Harrison, Herrin's Prairie.

LOT 70—FRENCH.

Pair Houdan, fowls—1 entry.	
First premium, Blenz & Wheelock, Decatur	$3 00
Pair Houdan, chicks—2 entries:	
First premium, Blenz & Wheelock, Decatur	3 00
Second premium, Blenz & Wheelock, Decatur	2 00
Pair Crevecour, fowls—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00

Awarding Committee—J. D. Brown, Weldon; F. S. Adams, El Paso; D. R. Harrison, Herrin's Prairie.

LOT 71—GAME.

Pair Black-breasted Red, fowls—1 entry:	
First premium, Allan Spickerd, Clinton	$3 00
Pair Black-breasted Red, chicks—6 entries:	
First premium, Phelps & Tuell, Canton	3 00
Second premium, Phelps & Tuell, Canton	2 00
Pair White, chicks—2 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, P. A. Partlett, Jacksonville	2 00
Pair Pile, fowls—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Pile, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Black, fowls—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Black, chicks—2 entries:	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00

Awarding Committee—H. Ringhouse, Bloomington; J. B. Foot, Norwood Park; John O'Hara, Carbondale.

LOT 72—BANTAMS.

Pair Sebright, fowls—5 entries	
First premium, J. H. Leaton, Bloomington	$3 00
Second premium, J. H. Leaton, Bloomington	2 00
Pair Sebright, chicks—3 entries·	
First premium, J. H. Leaton, Bloomington	3 00
Second premium, J. H. Leaton, Bloomington	2 00
Pair Red Pile Game, fowls—3 entries:	
First premium, Henry Ringhouse, Bloomington	3 00
Second premium, Henry Ringhouse, Bloomington	2 00
Pair Red Pile Game, chicks—4 entries	
First premium, Henry Ringhouse, Bloomington	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair White, chicks—1 entry	
Second premium, Blenz & Wheelock, Decatur	2 00
Pair Black, fowls—2 entries	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, J. H Leaton, Bloomington	2 00
Pair Black Red Game, fowls—5 entries	
First premium, J. H Leaton, Bloomington	3 00
Second premium, Blenz & Wheelock, Decatur	2 00
Pair Black Red Game, chicks—9 entries	
First premium, Blenz & Wheelock, Decatur	3 00
Second premium, Henry Ringhouse, Decatur	2 00
Pair Duck Wing, fowls—1 entry·	
First premium, P. A. Bartlett, Jacksonville	3 00
Pair Duck Wing, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00

Awarding Committee—J. E. Popkess, Paris; Geo. V. Frink, Bloomington; Jos. Flowers, Groveland.

LOT 73—MISCELLANEOUS.

Pair Silkies, chicks—1 entry·	
First premium, P. A. Bartlett, Jacksonville	$3 00

Awarding Committee—Geo. V. Frink, Bloomington; J. E. Popkess, Paris.

LOT 74—GUINEAS.

Pair White, fowls—1 entry:	
First premium, P A. Bartlett, Jacksonville	$3 00
Pair White, chicks—2 entries	
First premium, P. A. Bartlett, Jacksonville	3 00
Second premium, Abraham Reid, Jacksonville	2 00
Pair Common, chicks—1 entry:	
First premium, P. A. Bartlett, Jacksonville	3 00

Awarding Committee—Jos. Flowers, Groveland; Geo. V. Frink, Bloomington.

LOT 75—TURKEYS.

Pair Bronze, fowls—2 entries:	
First premium, P. A. Bartlett, Jacksonville	$4 00
Second premium, Geo. Dunlap, Bloomington	2 00
Pair Bronze, chicks—3 entries:	
First premium, Geo. Dunlap, Bloomington	4 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Black, fowls—1 entry;	
First premium, P. A. Bartlett, Jacksonville	4 00
Pair Black, chicks—1 entry	
First premium, P. A. Bartlett, Jacksonville	4 00
Pair Slate, fowls—1 entry	
First premium, P. A. Bartlett, Jacksonville	4 00
Pair White, fowls—2 entries	
First premium, Blenz & Wheelock, Decatur	4 00
Second premium—None awarded.	
Pair White, chicks—2 entries	
First premium, J. E. Popkess, Paris	4 00
Second premium, J. E. Popkess, Paris	2 00

Awarding Committee—J. B. Foot, Norwood Park; John O'Hara, Carbondale; C. B. Blodgett, Downer's Grove.

LOT 76—DUCKS.

Pair Rouen—4 entries:	
First premium, Blenz & Wheelock, Decatur	$3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Cayuga—2 entries	
First premium, Blenz & Wheelock, Decatur	3 00
Second premium, P. A Bartlett, Jacksonville	2 00
Pair White Muscovy—3 entries	
First premium, P A Bartlett, Jacksonville	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Colored Muscovy—1 entry:	
First premium, Blenz & Wheelock, Decatur	3 00
Pair White-crested—3 entries	
First premium, Blenz & Wheelock, Decatur	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Pekin—6 entries	
First premium, J E. Popkess, Paris	3 00
Second premium, A. G. Bartholomew, Elmwood	2 00
Pair Call—2 entries:	
First premium, P. A Bartlett, Jacksonville	3 00
Second premium, P. A. Bartlett, Jacksonville	2 00

Awarding Committee—J. B. Foot, Norwood Park; John O'Hara, Carbondale; C. B. Blodgett, Downer's Grove.

LOT 77—GEESE.

Pair Embden—2 entries:	
First premium, Blenz & Wheelock, Decatur	$4 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair Toulouse—2 entries:	
First premium, P. A. Bartlett, Jacksonville	4 00
Second premium, P. A. Bartlett, Jacksonville	2 00
Pair White China—4 entries:	
First premium, P. A. Bartlett, Jacksonville	4 00
Second premium, Blenz & Wheelock, Decatur	2 00
Pair African—1 entry:	
First premium, Blenz & Wheelock, Decatur	4 00

Awarding Committee—J. B. Foot, Norwood Park; John O'Hara, Carbondale; C. B. Blodgett, Downer's Grove.

LOT 78—RABBITS.

Pair Madagascar—2 entries	
First premium, J. E. Popkess, Paris	$3 00
Second premium, J. E. Popkess, Paris	2 00
Pair White Angoras—2 entries:	
First premium, J. E. Popkess, Paris	3 00
Second premium, J. E. Popkess, Paris	2 00
Pair Himalay—2 entries.	
First premium, J. E. Popkess, Paris	3 00
Second premium, J. E. Popkess, Paris	2 00
Pair Dutch—2 entries:	
First premium, J. E. Popkess, Paris	3 00
Second premium, J. E. Popkess, Paris	2 00
Pair Belgian Hares—2 entries:	
First premium, J. E. Popkess, Paris	3 00
Second premium, J. E. Popkess, Paris	2 00
Pair English Rabbits—2 entries:	
First premium, J. E. Popkess, Paris	3 00
Second premium, J. E. Popkess, Paris	2 00

Awarding Committee—P. A. Bartlett, Jacksonville; N. Hall, Bloomington, James S. Sierer, Jacksonville.

LOT 79—FERRETS.

Pair English Ferrets—4 entries	
First premium, Wm. Thorn Mossville	$3 00
Second premium, J. E. Popkess, Paris	2 00
Pair American White Ferrets—6 entries:	
First premium, J. E. Popkess, Paris	3 00
Second premium, J. E. Popkess, Paris	2 00

Awarding Committee—H. Ringhouse, Bloomington; W. C. Tuell, Canton; J. B. Foot, Norwood Park

LOT 80—DISPLAYS.

Display of varieties of Poultry—3 entries:	
First premium, P. A. Bartlett, Jacksonville	$15 00
Second premium, Blenz & Wheelock, Decatur	10 00
Display of Pigeons, 10 varieties—3 entries;	
First premium, P. A. Bartlett, Jacksonville	10 00
Second premium, P. A. Bartlett, Jacksonville	5 00

Awarding Committee—J. B. Foot, Norwood Park; John O'Hara, Carbondale; C. B. Blodgett, Downer's Grove.

CLASS F—MECHANICS.

Section 1.

WM. VOORHIES, *Superintendent.*

LOT 81—STOVES, CASTINGS, WORKED METALS, ETC.

Display of Stoves, Ranges, Tin and Copper Ware:
First premium, Culter & Proctor Stove Co., Peoria......................Diploma and $20 00
Second premium, Sandmeyer & Co., Peoria 10 00

Display of Brass and Iron Wire Work·
Premium, H. B. Van Eps, Peoria ....Silver Medal

Display of Fire Arms:
Premium, Isaac Walker & Son, Peoria..Silver Medal

Display of Silver-plated Ware·
Premium, Dunlap & Brown, Peoria.....................................$5.00 and silver Medal

Weather Strips.
Premium, Edmund Randolph, Springfield..... ....Silver Medal

Awarding Committee—Chas E. Cox, Quincy; Oliver Savill, Canton; Wm. E. Mack, Chicago; C. C. Cochran, Cambridge.

LOT 82—HOUSEHOLD FURNITURE.

Display of General Household Furniture·
First premium, Comstock, Avery & Co., Peoria ....Diploma and $20 00
Second premium, A. M. Weaver, Peoria 10 00

Churn
Premium, Cornish & Curtis, Fort Atkinson, Wis ....Silver Medal

Washing Machine
Premium, David Warnock, Champaign .. .. Silver Medal

Awarding Committee—Chas. E. Cox, Quincy; Oliver Savill, Canton: Wm. C. Mack, Chicago, C. C. Cochran, Cambridge.

LOT 83—MANUFACTURES OF VARIOUS KINDS.

Display of Rockingham Ware·
Premium, Peoria Pottery Co., Peoria ....Silver Medal

Display of Harness and Saddles
Premium, H. N. Frederick, Peoria................. ....Silver Medal

Display of Dental and Surgical Instruments·
Premium, G T. Gray, Peoria.. ....Silver Medal

Display of Jewelry
Premium, J. A. Hutchinson, Peoria ....Silver Medal

Display of Dry Goods and Carpets·
Premium, Clark & Co., Peoria ....Silver Medal

Display of Boots and Shoes
Premium, Moses Pettingill & Co , Peoria ....Silver Medal

Display of Druggists' Goods
Premium, Porte C. Wheeler, Peoria...Silver Medal

Set of Single Buggy Harness:
Premium, H. N. Frederick, Peoria...Silver Medal

Gentlemen's Saddle·
Premium, H. N. Frederick, Peoria...Silver Medal

Ladies' Saddle·
Premium, H. N. Frederick, Peoria................. ....Silver Medal

Horse Collar:
Premium, H. N. Frederick, Peoria .... Silver Medal

Awarding Committee—Chas. E. Cox, Quincy; Oliver Savill, Canton; Wm. C. Mack, Chicago; C. C. Cochran, Cambridge.

LOT 84—SEWING AND KNITTING MACHINES AND SPINNING WHEELS.

No premiums awarded in this lot, but every facility afforded for exhibition—24 entries.

CLASS F—MECHANICS.

Section 2.

B. PULLEN—*Superintendent.*

LOT 85—ENGINES, MACHINERY, ETC.

Portable Farm steam Engine
Premium, Rhea, Smalley & Co., Peoria .... Diploma

Pump for well:
Premium, Mast, Foos & Co., Springfield, O .... Silver Medal

Pump for cistern.
Premium, J. F. Temple & Sons, Chicago .... Silver Medal

Portable Grist Mill for farm use
Premium, American Grinding Mill Co., Chicago .... Diploma

Saw Mill and Engine, for lumber:
Premium, Chandler & Taylor, Indianapolis, Ind .... Silver Medal

Machine for making Drain Tile
Premium, Chandler & Taylor, Indianapolis, Ind .... Diploma and $20 00

Machine for making Brick:
Premium, L. B. Kennedy, Keokuk, Ia .... Diploma

Machine for opening Ditch for Drain Tile
Premium, King Hamilton & Co., Ottawa .... Silver Medal

Road making Machine
Premium, S. Pennock & Sons, Kennett Square, Pa .... Diploma and $20 00

Road Scraper
Premium, Ewald Over, Indianapolis, Ind .... Silver Medal

Horse Hay Fork.
Premium, J. E. Porter, Ottawa .... Silver Medal

Horse Hay Derrick, for Stacking
Premium, J. E Porter, Ottawa .... Silver Medal

Hay Elevator and Carrier, for moving Hay in Barn:
Premium, J. E. Porter, Ottawa .... Silver Medal

Portable Hay Press
Premium, P. K. Dedrick, Albany, N. Y .... Diploma

Horse Power, for general Farm Purposes:
Premium, Geo. W. Rouse & Son, Peoria $10 00

Clover Huller and Thresher:
Premium, Geo. W. Rouse & Son, Peoria .... Silver Medal

Hay and Straw Cutter:
Premium, Wayne Agricultural Co., Richmond, Ind .... Silver Medal

Mower Knife Grinder:
Premium, Tate Bros. & Co., Decatur .... Silver Medal

Display of Flower Pots :
Peoria Pottery Co., Peoria .... Silver Medal

Awarding Committee—J. M. Thomas, Wyoming; James Wiley, Kewanee; John Beekman, Moline; A. Allen, Southampton; W. K. Dunlap, Dunlap; A. Earhart, Christian Co.

LOT 86—LIGHT MACHINES.

No entries.

LOT 87—IMPLEMENTS, VEHICLES, ETC.

Steaming Apparatus for Cooking food for stock :
Premium, C. B. Rice & Co., Chicago .... Diploma and $10 00

Gate for farm use :
Premium, L. S. Kellogg, Fort Atkinson, Wis .... Silver Medal

Portable Fence :
Premium, A. Shively, North Manchester, Ind .... Silver Medal

Display of two-seated Carriages of various kinds:
Premium, Geo. Pfeiffer, Jr., Peoria .... Diploma and $10 00

Display of Buggies :
Premium, Kingman & Co., Peoria .... Diploma and 10 00

Two Horse Carriage .
Premium, Geo. Pfeiffer, Jr., Peoria .... Silver Medal

Top Buggy
Premium, Kingman & Co., Peoria .... Silver Medal

Open Buggy ·
Premium, Kingman & Co., Peoria .... Silver Medal

Sulky ·
Premium, Wm. Walker, Aurora .... Silver Medal

Barouche :
Premium, Geo. Pfeiffer, Jr., Peoria .... Silver Medal

Two Horse Wagon ·
Premium, Geo. Pfeiffer, Jr., Peoria .... Diploma and $10 00

Spring Wagon :
Premium, Rome Spring Wagon Co., Rome, N. Y .... Diploma and 5 00

Awarding Committee—J. M Thomas, Wyoming Wm. Allen, Southampton; James Wiley, Kewanee; Alfred Allen, Southampton; W. K. Dunlap, Dunlap.

LOT 88—FARM MACHINERY.

No premiums awarded, nor examination by committee, but every facility afforded for exhibition.

CLASS G—FARM PRODUCTS.

J. M. WASHBURN, *Superintendent.*

LOT 89—GRAINS AND SEEDS.

Sample of White Winter Wheat, 1 bushel:
First premium, M. E. Newburn, Hennepin $10 00
Second premium, Hiram Sibley & Co., Chicago 5 00

Sample of Red Winter Wheat, 1 bushel·
First premium, Hiram Sibley & Co., Chicago 10 00
Second premium, Chris. Hile, Manito 5 00

Sample of Red Spring Wheat, 1 bushel:	
First premium, W. T. Scott, Des Moines, Ia	$10 00
Second premium, Chris. Hile, Manito	5 00
Sample of Rye, one bushel:	
First premium, W. T. Scott, Des Moines, Ia	5 00
Second premium, Hiram Sibley & Co., Chicago	3 00
Sample of oats, 1 bushel·	
First premium, Chris. Hile, Manito	5 00
Second premium, W. T. Scott, Des Moines, Ia	3 00
Sample of Fall Barley, 1 bushel	
Second premium, Hiram Sibley & Co., Chicago	3 00
Sample of Spring Barley, 1 bushel·	
Second premium, Hiram Sibley & Co., Chicago	3 00
Sample of White Indian Corn, in the ear, 1 bushel:	
First premium, A. C. Dehority, Hilton	5 00
Second premium, Jos. J. Arnold, Hilton	3 00
Sample of Yellow Indian Corn, in the ear, 1 bushel:	
First premium, S. Crane, Farmington	5 00
Second premium, Jos. J. Arnold, Hilton	3 00
Sample of Corn on the stalk, 5 or more stalks	
First premium, A. J. & B. C. Dunlap, Dunlap	2 00
Second premium, Jos. J. Arnold, Hilton	1 00
Sample of Pop-corn, 1 peck·	
First premium, J. P. Beck, Peoria	3 00
Second premium, J. P. Beck, Peoria	2 00
Sample of Buckwheat, 1 bushel,	
First premium, Hiram Sibley & Co., Chicago	5 00
Second premium, W. T. Scott, DesMoines, Ia	2 00
Sample of Timothy Seed, 1 bushel	
First premium, Hiram Sibley & Co., Chicago	5 00
Second premium, A. B. Watts, Farmingdale	2 00
Sample of Clover Seed, 1 bushel	
First premium, A. B. Watts, Farmingdale	5 00
Second premium, G. B. Roe, Payne's Point	2 00
Sample of Blue Grass Seed, 1 bushel	
First premium, Hiram Sibley & Co., Chicago	5 00
Sample of Orchard Grass Seed, 1 bushel·	
First premium, Hiram Sibley & Co., Chicago	5 00
White Field Beans ½ bushel·	
First premium, Hiram Sibley & Co., Chicago	5 00
Second premium, J. T. Roe, Payne's Point	2 00
Lima Beans, 1 peck·	
First premium, J. P. Beck, Peoria	5 00
Second premium, C. G. Boehme, Freeport	2 00
Variety of garden peas, 1 quart each·	
Premium, Hiram Sibley & Co., Chicago	2 00
Castor Beans, 1 bushel·	
Premium, Hiram Sibley & Co., Chicago	10 00
Display of grains and seeds by any one person; samples distinct from foregoing, consisting of not less than 1 quart of grain, and 1 pint of seed:	
Premium, Hiram Sibley & Co., Chicago	30 00

Awarding Committee—Milo Barnard, Manteno; N. S. Barber, ——; C. B. Morey, ——.

LOT 90—VEGETABLES.

Sample of Early Irish Potatoes, 1 bushel:	
First premium, S. Crane, Farmington	$5 00
Second premium, J. P. Beck, Peoria	3 00
Sample of Late Irish Potatoes, 1 bushel.	
First premium, D. J. Piper, Foreston	5 00
Second premium, J. P. Beck, Peoria	3 00

Sweet Potatoes, 1 bushel:	
First premium, J. P. Beck, Peoria	$5 00
Second premium, Joseph Shaff, Peoria	3 00
Lot of Onions, 1 bushel:	
First premium, Joseph Shaff, Peoria	4 00
Second premium, W. T. Scott, DesMoines, Ia	2 00
Table Turnips, 1 bushel:	
First premium, Joseph Shaff, Peoria	4 00
Second premium, C. G. Boehme, Freeport	2 00
Beets for table use, 1 bushel:	
First premium, Theodore Leers, Peoria	4 00
Second premium, J. P. Heading, Peoria	2 00
Mangel Wurzels, 1 bushel:	
First premium, C. G. Boehme, Freeport	4 00
Second premium, W. T. Scott, DesMoines, Ia	2 00
Parsnips for table use, 1 bushel:	
First premium, J. T. Roe, Payne's Point	4 00
Second premium, C. G. Boehme, Freeport	2 00
Lot of Celery—12 stalks.	
First premium, Theodore Leers, Peoria	4 00
Second premium, Joseph Shaff, Peoria	2 00
Cabbage, 6 heads·	
First premium, Joseph Shaff, Peoria	4 00
Second premium, C. G. Boehme, Freeport	2 00
Tomatoes, 1 peck.	
First premium, J. P. Beck, Peoria	4 00
Second premium, Theodore Leers, Peoria	2 00
Six Pumpkins	
Premium, S. Crane, Farmington	4 00
Six Squashes	
Premium, Hiram Sibley & Co., Chicago	4 00
Six Muskmelons	
First premium, Joseph Shaff, Peoria	4 00
Sample of Carrots, ½ bushel	
Premium, Theodore Leers, Peoria	5 00
Six Egg-plant fruit·	
First premium, Joseph Shaff, Peoria	4 00
Second premium, Theodore Leers, Peoria	2 00
Variety of Garden Seeds, named·	
First premium, Hiram Sibley & Co., Chicago	10 00
Second premium, C. G. Boehme, Freeport	5 00
Sample of Tobacco, shown "in hand," 10 pounds·	
First premium, E. M. Jack, Peoria	5 00
Second premium, C. G. Boehme, Freeport	3 00
Sample of Sugar Beets, 1 bushel·	
First premium, W. T. Scott, DesMoines, Ia	4 00
Second premium, J. P. Heading, Peoria	2 00
Display of Garden Vegetables, samples distinct from foregoing, not less than 20 varieties·	
First premium, Theodore Leers, Peoria	10 00
Second premium, W. T. Scott, DesMoines, Ia	5 00

Awarding Committee—E A. Pride, ——; Geo. W. Butts, ——; John S. Potter, ·

LOT 91—BUTTER, CHEESE, ETC.

Barrel of Winter Wheat Flour.	
Premium, H. C. & C. Durand, Chicago	Diploma
Barrel of Spring Wheat Flour:	
Premium, H. C. & C. Durand, Chicago	Diploma
Butter made in May or June, 10 pounds:	
First premium, Miss H. M. Heading, Peoria	$10 00

Fresh Butter, 10 pounds:	
First premium, Miss H. M. Heading, Peoria	$10 00
Second premium, Miss Jennie Schnebley, Peoria	5 00
Cured Cheese, under 1 year old:	
First premium, F. E. Stone, Lawn Ridge	10 00
New Cheese:	
First premium, F. E. Stone, Lawn Ridge	10 00
Lot of Honey, 10 pounds:	
First premium, Mrs. L. Harrison, Peoria	5 00
Second premium, John Short, Peoria	3 00

Awarding Committee—John S. Potter, ——; Geo. W. Butts, ——; E. A. Pride, ——.

LOT 92—BREAD, CAKES, ETC.

Loaf of Wheat Bread, made with Hop Yeast:	
First premium, E. L. Bosserman, Peoria	$4 00
Second premium, Mrs. R. B. Amsbury, Sheldon	2 00
Loaf of Wheat Bread, made with Milk-rising:	
First premium, Mrs. H. B. Barnard, Pekin	4 00
Second premium, Mrs. A. S. Barlow, Peoria	2 00
Loaf of Bread, made of Unbolted Flour·	
First premium, Mrs. J. F. Robinson, Atlanta	4 00
Second premium, Mrs. Cellie Keene, Atlanta	2 00
Loaf of Rye Bread:	
First premium, Mrs. Wm. Horton, Weston	4 00
Second premium, Mrs. M. P. Carlock, Atlanta	2 00
Loaf of Corn Bread·	
First premium, Mrs J. P. Beck, Peoria	4 00
Second premium, Mrs. H. B. Barnard, Pekin	2 00
Sponge Cake:	
First premium, Mrs. E A. Long, Peoria	4 00
Second premium, Mrs R. H. Gaston, Toulon	2 00
Snow Cake:	
First premium, Miss Jennie Schnebly, Peoria	4 00
Second premium, Mrs. Cellie Keene, Atlanta	2 00
Pound Cake·	
First premium, Mrs. R. H. Gaston, Toulon	4 00
Jelly Cake	
First premium, Mrs. M. J. McKinney, Peoria	4 00
Second premium, Mrs J. P Beck, Peoria	2 00
Fruit Cake	
First premium, Miss Maude C. Hinsey, Pekin.	4 00
Gold Cake	
First premium, Mrs. R. H Gaston, Toulon	4 00
Second premium, Mrs. J. P. Beck, Peoria	2 00
Nut Cake	
First premium, Mrs. M. P. Carlock, Atlanta	4 00
Doughnuts·	
First premium, Mrs. R. H. Gaston, Toulon	4 00
Second premium, Miss Maude C. Hinsey, Pekin	2 00
Ginger Cake	
First premium, Mrs. Cellie Keene, Atlanta	4 00
Second premium, Mrs. J. F. Robinson, Atlanta	2 00
Marble Cake:	
First premium, Mrs. R. B. Amsbury, Sheldon	4 00
Second premium, Mrs. Cellie Keene, Atlanta	2 00
Lemon Cake:	
First premium, Mrs E. A. Long, Peoria	4 00
Second premium, Miss Maude C. Hinsey, Pekin.	2 00
Cocoanut Cake:	
First premium, Mrs. M. J. McKinney, Peoria	4 00

Queen of the Prairie Cake:	
First premium, Miss Jennie Schnebly, Peoria	$4 00
Second premium, Miss Maude C. Hinsey, Pekin	2 00
Chocolate Cake:	
First premium, Miss Jennie Schnebly, Peoria	4 00
Second premium, Mrs. M. J. McKinney, Peoria	2 00
Quart of Sorghum Molasses:	
First premium, Mrs. J. F. Robinson, Atlanta	3 00
Pound of Browned Coffee:	
Premium, Mrs. L. E. Rockwell, Quincy	1 00
Can Sweet Corn:	
Premium, Mrs. Wm. Horton, Weston	2 00
Can Common Corn:	
Premium, Mrs. Wm. Horton, Weston	2 00

Awarding Committee—Mrs. Wallace Matthews, Mrs. Warren Poole, Edgar Ayres.

LOT 93—BREAD AND CAKES.

By Girls under 14 years of age.

Loaf of Wheat Bread, made with Hop Yeast:	
First premium, Lucy C. Schnebly, Peoria	$4 00
Second premium, Mattie Stonebraker, Peoria	2 00
Loaf of Wheat Bread, made with milk-rising:	
First premium, Lou Keene, Atlanta	4 00
Second premium, Gladez Barnard	2 00
Loaf of Bread, made of unbolted Flour:	
First premium, Iva E. Robinson, Atlanta	4 00
Second premium, Lou Keene, Atlanta	2 00
Loaf of Rye Bread	
First premium, Lou Keene, Atlanta	4 00
Second premium, Lina Carlock, Atlanta	2 00
Loaf of Corn Bread·	
First premium, Lina Carlock, Atlanta	4 00
Second premium, Lou Keene, Atlanta	2 00
Snow Cake·	
First premium, Lou Keene, Atlanta	4 00
Second premium, Lucy C. Schnebly, Peoria	2 00
Jelly Cake:	
First premium, Iva E. Robinson, Atlanta	4 00
Second premium, Lucy C. Schnebly, Peoria	2 00
Fruit Cake:	
First premium, Lou Keene, Atlanta	4 00
Silver Cake:	
First premium, Iva E. Robinson, Atlanta	4 00
Second premium, Lucy C. Schnebly, Peoria	2 00
Nut Cake:	
First premium, Lina Carlock, Atlanta	4 00
Doughnuts:	
First premium, Lou Keene, Atlanta	4 00
Second premium, Lina Carlock, Atlanta	2 00
Ginger Cake:	
First premium, Lou Keene, Atlanta	4 00
Second premium, Lina Carlock, Atlanta	2 00

Awarding Committee—Mrs. Wallace Matthews, Mrs. Warren Poole, Edgar Ayres.

CLASS H—HORTICULTURE AND FLORICULTURE.

GEO. S. HASKELL. *Superintendent.*

Section 1—Trees, Flowers and Plants.

LOT 94—FLOWERS AND PLANTS

For Professional Florists and Dealers only.

Collection of distinct varieties of Greenhouse and Hothouse plants, not to include specimens entered for other premiums:	
First premium, F A Baller, Bloomington	Diploma and $30 00
Second premium, James Cole, Peoria	20 00
Collection of Agaves and Aloes:	
Premium, James Cole, Peoria	3 00
Collection of Cactus, excluding Agaves and Aloes:	
Premium, James Cole, Peoria	3 00
Collection of Echeverias and Succulents:	
Premium, James Cole, Peoria	3 00
Collection of Tuberoses, rooted:	
Premium, F. A. Baller, Bloomington	3 00
Collection of Geraniums	
First premium, James Cole, Peoria	8 00
Second premium, F. A. Baller, Bloomington	5 00
Six Single Varieties, Geraniums	
Premium, James Cole, Peoria	3 00
Six Double Varieties Geraniums:	
Premium, James Cole, Peoria	3 00
Collection of Achyranthus	
Premium, James Cole, Peoria	3 00
Collection of Abutilons, in bloom:	
Premium, James Cole, Peoria	3 00
Collection of Carnations, in bloom	
First premium, F. A. Baller, Bloomington	5 00
Second premium, James Cole, Peoria	3 00
Six Double Fuchsias, in bloom	
Premium, F. A. Baller, Bloomington	3 00
Six Single Fuchsias, in bloom.	
Premium, F. A. Baller, Bloomington	3 00
Collection of Roses in pots, in bloom	
First premium, James Cole, Peoria	8 00
Second premium, F. A. Baller, Bloomington	4 00
Single Specimen Plant, of any kind	
Premium, F. A. Baller, Bloomington	4 00
Single Specimen Hothouse Foliage Plant	
Premium, F. A. Baller, Bloomington	4 00
Collection of Palms	
First premium, James Cole, Peoria	8 00
Single Palm	
Premium, James Cole, Peoria	4 00
Single Ficus:	
Premium, F. A. Baller, Bloomington	4 00
Collection of Ferns	
Premium, F. A. Baller, Bloomington	6 00

Collection of Hot and Greenhouse Climbers:	
First premium, F. A. Baller, Bloomington	$3 00
Collection of Calladiums:	
First premium, F. A. Baller, Bloomington	3 00
Collection of Coleus:	
First premium, James Cole, Peoria	4 00
Twelve Crotons:	
First premium, James Cole, Peoria	5 00
Collection of Bulbs, correctly named	
Premium, J. C. Vaughan, Chicago ..... Silver Medal and	5 00

Awarding Committee—H. Ross, Gibson; Mrs. G. W. Stone, Princeton; James T. Johnson, Warsaw.

LOT 95—CUT FLOWERS.

FOR PROFESSIONAL FLORISTS.

Collection of Cut Flowers:	
First premium, F. A. Baller, Bloomington	$8 00
Second premium, W. A. Burdick, Rockford	4 00
Collection of Antirrhinums:	
Premium, W. A. Burdick, Rockford	3 00
Collection of Asters:	
First premium, W. A. Burdick, Rockford	5 00
Collection of Dahlias, named:	
First premium, W. A. Burdick, Rockford	5 00
Second premium, F. A. Baller, Bloomington	3 00
Collection of 18 Dahlias, dissimilar blooms	
First premium, W. A. Burdick, Rockford	5 00
Collection of Pompone, or Bouquet Dahlias, 6 varieties:	
First premium, W. A. Burdick, Rockford	3 00
Collection of Everlastings	
Premium, J. C. Vaughan, Chicago	4 00
Collection of Grasses	
Premium, C. W. Dorr, Des Moines, Ia	4 00
Display of Cut Roses	
First premium, F. A. Baller, Bloomington	10 00
Collection of Gladioli	
First premium, J. C. Vaughan, Chicago	10 00
Second premium, W. A. Burdick, Rockford	5 00
Collection of Pansies	
First premium, W. A. Burdick, Rockford	5 00
Second premium, James Cole, Peoria	3 00
Collection of Phlox Drummondi	
First premium, W. A. Burdick, Rockford	5 00
Collection of Tuberoses	
First premium, J. C. Vaughan, Chicago	4 00
Collection of Verbenas, named:	
First premium, James Cole, Peoria	5 00
Second premium, F. A. Baller, Bloomington	3 00
Collection of Verbenas, raised from seed	
First premium, W. A. Burdick, Rockford	5 00
Collection of Cut Geraniums:	
First premium, James Cole, Peoria	5 00
Second premium, F. A. Baller, Bloomington	3 00
Collection of Double Zinnia:	
First premium, W. A Burdick, Rockford	5 00
Second premium, James Cole, Peoria	3 00
Collection of Double Petunias:	
First premium, W. A. Burdick, Rockford	5 00

Collection of Single Petunias:	
First premium, W. A. Burdick, Rockford	$5 00
Collection of Flowers, including above:	
Premium, W. A. Burdick, Rockford,	Diploma

FLORAL DESIGNS, BOUQUETS, ETC.

Floral Design·	
First premium, James Cole, Peoria	$15 00
Second premium, W. A. Burdick, Rockford	10 00
Floral Wreath:	
Premium, James Cole, Peoria	5 00
Design of Cut Flowers:	
Premium, James Cole, Peoria	5 00
Pair Flat Hand-Bouquets.	
Premium, James Cole, Peoria	5 00
Pair Round Hand-Bouquets	
Premium, James Cole, Peoria	5 00
Basket of Cut Flowers·	
Premium, James Cole, Peoria	5 00
Basket of Winter Flowers	
First premium, J. C. Vaughan, Chicago	5 00
Pair Bouquets of Grasses:	
First premium, J. C. Vaughan, Chicago	5 00
Harp or Lyre	
Premium, W. A. Burdick, Rockford	5 00
Cross·	
Premium, James Cole, Peoria	5 00
Crown:	
Premium, James Cole, Peoria	5 00
Display of Florists Requisites:	
Premium, Hiram Sibley & Co., Chicago	Diploma and 10 00

Awarding Committee—H. Ross, Gibson, Jas. T. Johnson, Warsaw; Mrs. G. W. Stone, Princeton.

LOT 96—FLOWERS AND PLANTS—BY AMATEURS.

No Professional Florist allowed to compete.

Collection of Greenhouse, Hothouse and Bedding Plants, in pots	
First premium, Sophia Bauscher, Freeport	$12 00
Collection of Cactus and Aloes	
First premium, Sophia Bauscher, Freeport	3 00
Second premium, Maria Boehme, Freeport	2 00
Collection of Winter-blooming Begonias	
First premium, Sophia Bauscher, Freeport	2 00
Second premium, Maria Boehme, Freeport	1 00
Collection of Carnations, in bloom	
First premium, Mrs. Elizabeth Bauscher, Freeport	3 00
Collection of Geraniums	
First premium, Maria Boehme, Freeport	3 00
Second premium, Sophia Bauscher, Freeport	2 00
Collection of Foliage Plants	
First premium, Sophia Bauscher, Freeport	3 00
Second premium, Mrs. Elizabeth Bauscher, Freeport	2 00
Collection of Fuchsias, in bloom·	
First premium, Mrs. Elizabeth Bauscher, Freeport	3 00
Second premium, Sophia Bauscher, Freeport	2 00
Collection of Pot Roses, in bloom, 6 varieties	
First premium, Mrs. Elizabeth Bauscher, Freeport	3 00

Pair of Hanging Baskets of Plants:	
First premium, Mrs. Elizabeth Bauscher, Freeport	$3 00
Single Hanging Basket of Plants	
First premium, Maria Boehme, Freeport	2 00

Awarding Committee—H. G. Savage, Chicago, Mrs. L. Scofield, **Newark; D. J. Piper**, Foreston

LOT 97—CUT FLOWERS.

No Professional Florist allowed to compete.

Collection of Cut Flowers	
First premium, Mrs. C. Hinsey, Pekin	$5 00
Second premium, Maria Boehme, Freeport	3 00
Collection of Asters:	
First premium, Miss H. M. Heading, Peoria	2 00
Collection of Balsams	
Premium, Mrs. C. Hinsey, Pekin	2 00
Collection of Dahlias named, 10 varieties	
First premium, Maria Boehme, Freeport	3 00
Collection of Everlastings	
First premium, Mrs. C. Hinsey, Pekin	2 00
Second premium, Miss Alice J. Heading, Peoria	1 00
Collection of Japan Pinks	
First premium, Miss H. M. Heading, Peoria	3 00
Second premium, Mrs. C. Hinsey, Pekin	2 00
Collection of Single Petunias	
First premium, Mrs. C. Hinsey, Pekin	3 00
Collection of Double Petunias	
First premium, Mrs. C. Hinsey, Pekin	3 00
Collection of Phlox Drummondi	
First premium, Mrs. C. Hinsey, Pekin	3 00
Second premium, Miss H. M. Heading, Peoria	2 00
Collection of Verbenas	
First premium, Mrs. C. Hinsey, Pekin	2 00
Second premium, Miss H. M. Heading, Peoria	1 00
Double Zinnia	
First premium, Miss H. M. Heading, Peoria	2 00
Second premium, Maria Boehme, Freeport	1 00

FLORAL DESIGNS, BOUQUETS, ETC.

Floral Design of Dahlias	
Premium, Mrs. C. Hinsey, Pekin	3 00
Floral Pyramid or Mound:	
Premium, Miss H. M. Heading, Peoria	3 00
Floral Design of Cut Flowers	
Premium, Mrs. C. Hinsey, Pekin	3 00
Pair Flat Hand-Bouquets	
First premium, Miss Maude C. Hinsey, Pekin	2 00
Second premium, Mrs. C. Hinsey, Pekin	1 00
Pair Round Hand-Bouquets.	
First premium, Mrs. C. Hinsey, Pekin	2 00
Pair Grass Bouquets:	
First premium, Mrs. C. Hinsey, Pekin	2 00
Second premium, Albert Bauscher, Freeport	1 00
Basket of Cut Flowers	
First premium, Maria Boehme, Freeport	3 00
Second premium, Mrs. C. Hinsey, Pekin	2 00

Winter Basket of Flowers, Leaves and Mosses:

First premium, Mrs. C. Hinsey, Pekin	$3 00
Second premium, Albert Bauscher, Freeport	2 00

Pair Winter Bouquets:

First premium, Albert Bauscher, Freeport	3 00
Second premium, Miss Maude C. Hinsey, Pekin	2 00

Floral Heart:

Premium, Miss Maude C. Hinsey, Pekin	3 00

Floral Star:

Premium, Miss H. M. Heading, Peoria	3 00

Awarding Committee—H. G. Savage, Chicago; Mrs. L. Scofield, Newark; D. J. Piper, Foreston.

Section 2—Fruits, Jellies, Pickles, etc.

LOT 98—HOME-GROWN FRUITS.

For Professional Fruit-Growers or Orchardists

Collection of Fruits by a Horticultural Society, grown within the territorial limits of the Society exhibiting

First premium, Horticultural Society, Warsaw	$50 00
Second premium, Horticultural Society, Champaign	25 00

Collection of Apples—Crabs excepted—25 varieties

First premium, H. M. Dunlap, Savoy	25 00
Second premium, J. T. Johnson, Warsaw	15 00

Collection of Apples, 15 varieties, for Southern Illinois, value for market purposes considered

First premium, J. O. Cline, Watson	15 00

Collection of Apples, 15 varieties, for Central Illinois, value for market purposes considered

First premium, H. M. Dunlap, Savoy	15 00
Second premium, A. C. Hammond, Warsaw	10 00

Collection of Apples, 15 varieties, for Northern Illinois, value for market purposes considered

First premium, D. J. Piper, Foreston	15 00
Second premium, John Bauscher, Freeport	10 00

Siberian Crab Apples—5 varieties

First premium, H. M. Dunlap, Savoy	3 00
Second premium, Maria Boehme, Freeport	2 00

Collection of Pears, 6 varieties, the product of Illinois

First premium, H. M. Dunlap, Savoy	5 00

Collection of Autumn Pears, 5 varieties, the product of Illinois

First premium, H. M. Dunlap, Savoy	5 00

Collection of Winter Pears, 3 varieties, the product of Illinois

First premium, H. M. Dunlap, Savoy	5 00

Collection Seedling Peaches

First premium, F. M. Benham, Olivet, Mich	4 00

Collection of Plums—3 varieties

First premium, F. M. Benham, Olivet, Mich	3 00

Display of Grapes, correctly named

First premium, D. J. Piper, Foreston	10 00
Second premium, F. M. Benham, Olivet, Mich	5 00

Early Grapes—3 bunches.

First premium, D. J. Piper, Foreston	4 00
Second premium, H. M. Dunlap, Savoy	2 00

Three varieties of Late Grapes, for table use—3 bunches each

First premium, D. J. Piper, Foreston	4 00
Second premium, F. M. Benham, Olivet, Mich	2 00

Three varieties of Wine Grapes 3 bunches each

First premium, D. J. Piper, Foreston	3 00
Second premium, H. M. Dunlap, Savoy	2 00

Single variety of New Grapes—2 bunches:	
Premium, D. J. Piper, Olivet, Mich	$3 00
Most Attractive and Artistically Arranged Display of Fruits:	
First premium, A. C. Hammond, Warsaw	8 00
Second premium, O. W. Hoff, Wataga	5 00

Awarding Committee—D. B. Wier, Lacon; A. A. Stevens, Peoria; Lloyd Shaw, ——.

LOT 99—HOME-GROWN FRUITS—BY AMATEUR.

Collection of Apples, by Farmer or Amateur—10 varieties:	
First premium, Ed. P. Johnson, Warsaw	$8 00
Second premium, F. E. Baker, Champaign	5 00
Collection of Apples, by Farmer or Amateur—6 varieties:	
First premium, Ed. P. Johnson, Warsaw	5 00
Second premium, F. E. Baker, Champaign	3 00
Collection of Pears, by Farmer or Amateur:	
First premium, A. D. Benham, Olivet, Mich	3 00
Second premium, J. Larosh, Pekin	2 00
Collection of Plums, by Farmer or Amateur.	
First premium, A. D. Benham, Olivet, Mich	3 00
Second premium, C. G. Boehme, Freeport	2 00
Early Grapes—4 bunches:	
First premium, C. G. Boehme, Freeport	4 00
Second premium, J. V. N. Standish, Wataga	2 00
Three varieties of Late Grapes, for table use—3 bunches each:	
First premium, A. D. Benham, Olivet, Mich	4 00
Second premium, J. V. N. Standish, Wataga	2 00
Three varieties of Wine Grapes—3 bunches each	
First premium, F. E. Baker, Champaign	4 00
Second premium, J. V. N. Standish, Wataga	2 00
Eight varieties of Apples, for Central Illinois:	
First premium, A. A. Stevens, Peoria	6 00
Second premium, F. E. Baker, Champaign	4 00
Display of Grapes:	
First premium, J. V. N. Standish, Wataga	6 00
Second premium, Mrs. Elizabeth Bauscher, Freeport	4 00

Awarding Committee—D. B. Wier, Lacon; O. B. Galusha, Morris, Lloyd Shaw.

LOT 100—JELLIES, PRESERVES, PICKLES, ETC.

Six or more varieties of Fruit Jelly, including Apple, Plum, Quince, Crab Apple, Peach and Cherry	
First premium, Mrs. Cellie Keene, Atlanta	$6 00
Second premium, Mrs. J. W. Smith, Pontiac	4 00
Six or more varieties of Small Fruit Jelly, including Currant, Grape, Blackberry, Raspberry, Strawberry and Gooseberry	
First premium, Mrs. Cellie Keene, Atlanta	6 00
Second premium, Mrs. R. H. Gaston, Toulon	4 00
Display of Jellies, not including samples entered for other premiums	
First premium, Mrs. J. F. Robinson, Atlanta	12 00
Second premium, Mrs. Cellie Keene, Atlanta	8 00
Six or more varieties of Canned Fruit, including Apple, Plum, Quince, Crab Apple, Peach, Cherry and Tomato:	
First premium, Mrs. Cellie Keene, Atlanta	6 00
Second premium, Mrs. J. F. Robinson, Atlanta	4 00
Six or more varieties of Canned Small Fruits, including Currant, Grape, Blackberry, Raspberry, Strawberry and Gooseberry:	
First premium, Mrs. Cellie Keene, Atlanta	6 00
Second premium, Mrs. J. F. Robinson, Atlanta	4 00
Display of Canned Fruits, not including samples entered for other premiums:	
First premium, Mrs. Cellie Keene, Atlanta	12 00
Second premium, Mrs. J. F. Robinson, Atlanta	8 00

Ten or more varieties of Preserved Fruits, including Crab Apple, Quince, Grape, Pear, Strawberry, Cherry and Tomato:

First premium, Mrs. Cellie Keene, Atlanta	$8 00
Second premium, Mrs. Wm. Horton, Weston	5 00

Six or more varieties Fruit Butter, including Apple, Peach, Pear, Plum, Quince and Crab Apple:

First premium, Mrs. F. K. Parmenter, Knoxville	6 00
Second premium, Mrs. Cellie Keene, Atlanta	4 00

Six or more varieties of Fruit Jam, including Blackberry, Currant, Raspberry, Strawberry, Grape and Gooseberry:

First premium, Mrs. J. F. Robinson, Atlanta	6 00
Second premium; Mrs. Cellie Keene, Atlanta	4 00

Ten or more varieties of Sour Pickles, including Cucumber, Cabbage, Onion, Mixed Pickles, Piccalilli, Chow Chow, Gherkens, Peaches, Mangoes and Cherries:

First premium, Mrs. Wm. Horton, Weston	6 00
Second premium, Mrs. Cellie Keene, Atlanta	4 00

Five or more varieties of Sauces, Relishes, Catsups, etc., including Tomato, Walnut and Cucumber Catsups, Cider Vinegar and Table Sauce:

First premium, Mrs. Cellie Keene, Atlanta	6 00
Second premium, Mrs. J. F. Robinson, Atlanta	4 00

Display of Horticultural Implements, by manufacturer or agent·

Premium, Hiram Sibley & Co., Chicago	Diploma and 20 00

Awarding Committee—A. C. Hammond, Warsaw; R. K. Dorr, DesMoines, Iowa; Mrs. H. M. Dunlap, Champaign.

CLASS I—FINE AND LIBERAL ARTS.

JOHN P. REYNOLDS, *Superintendent.*

LOT 101—FINE ARTS.

Specimen of Sculpture·

Premium, Trubble & Son, Peoria	Silver Medal

Collection of Statuary

Premium, Trubble & Son, Peoria	Silver Medal

Collection of Sculpture

Premium, Trubble & Son, Peoria	Silver Medal

Portrait in Oil·

Premium, R. B. Hansford, Carthage	Silver Medal

Original Oil Painting of an Illinois Landscape

Second premium, L. A. Loomis, Peoria	$15 00

Fancy Painting in Oil

Premium, Miss L. Humble, Peoria	Silver Medal

Animal Painting, in Oil

Premium, Miss L. Humble, Peoria	Diploma

Fruit Painting, in Oil.

Premium, R. B. Hansford, Carthage	Silver Medal

Collection of 5 Oil Paintings·

Premium, Miss Nettie A. Linville, Peoria	Silver Medal

Flower Painting, in Water Colors·

Premium, Miss Fannie Bracken, Peoria	Silver Medal

Bird Painting, in Water Colors:

Premium, Newkirk & Pay, Peoria	Silver Medal

·Portrait, in Crayon:

Premium, Chas. E. Smith, Peoria	Silver Medal

Crayon Drawing, other than portrait:

Premium, Ralph Wolf, Peoria	Silver Medal

Photograph, in India Ink:
Premium, Thos. Mills, Peoria .... Silver Medal

Photograph, in Water Colors:
Premium, Chas. E. Smith, Peoria .... Silver Medal

Copied Work, touched in India Ink:
Premium, Chas. E Smith, Peoria .... Silver Medal

Copied Work, touched in Water Colors
Premium, Miss M. M. Hodges Peoria .... Silver Medal

Painting on Silk
Premium, Mrs. L. E. Rockwell, Quincy .... Silver Medal

Plain Photograph
Premium, Chas. E. Smith, Peoria .... Silver Medal

Awarding Committee—W. H. Crowe, Peoria; C. L. Martin, Quincy; W. H. Chapman, Peoria; John Minor, Peoria.

LOT 102—MUSICAL INSTRUMENTS.

Reed Organ:
Premium, Adair & Brown, Peoria .... Silver Medal

Grand or Semi-grand Pianoforte:
Premium, Adair & Brown, Peoria .... Silver Medal

Flute:
Premium, G. B. Roe, Payne's Point .... Silver Medal

Boudoir Piano:
Premium, Adair & Brown, Peoria .... Silver Medal

Square Piano
Premium, Adair & Brown, Peoria .... Silver Medal

Awarding Committee—Mary E Stevens, Peoria, Alice Hilliard, Peoria; Kate E. Chapman, Peoria.

LOT 103—PRINTING, ENGRAVING, ARCHITECTURAL AND MECHANICAL DRAWING, AND DECORATIVE ART DESIGNING.

Collection of 5 Steel Engravings
Premium, Newkirk & Fay, Peoria .... Diploma

Pencil Drawing
Premium, A. B. Upham, Peoria .... Silver Medal

Exhibit of Business Penmanship, from a Commercial College:
Premium, Business College, Jacksonville .... Silver Medal

Exhibit of Ornamental Penmanship, from a Commercial College:
Premium, Orchard City Business College, Burlington, Ia .... Silver Medal

Pen Drawing
Premium, Business College, Davenport, Ia .... Silver Medal

Pen Lettering.
Premium, Business College, Davenport, Ia .... Silver Medal

Awarding Committee—C. L. Martin, Quincy, W. H. Crowe, Peoria; W. H. Chapman, Peoria; F. P. Dilger, Chicago; E M Schnebly, Peoria, E. H. Hunt, Chicago

LOT 104—WAX, FEATHER, HAIR WORK, ETC

Colored Wax-work
First premium, Miss Mary Stritt, Peoria $2 00
Second premium, Mrs H B. Barnard, Pekin 1 00

White Wax-work
First premium, W. H. Meeker, Farmington 2 00
Second premium, Mrs. T. L. O'Harra, Henry 1 00

Work in Feathers:
First premium, Mrs. H. B. Barnard, Pekin 2 00
Second premium, Mrs. H. B. Barnard, Pekin 1 00

Work in Hair:

First premium, Miss Henrietta Melke, Peoria	$2 00
Second premium, Mrs. H. B. Barnard, Pekin	1 00

Shell-work:

First premium, Mrs. H. B. Barnard, Pekin	2 00
Second premium, Mrs. H. B. Barnard, Pekin	1 00

Fancy worsted Bouquet·

First premium, Valentine Lenert, Groveland	2 00
Second premium, Miss Celia S. Clapp, Payne's Point	1 00

Leather-work·

First premium, Mrs. A. E. Petherbridge, Peoria	2 00
Second premium, Mrs H. B. Barnard, Pekin	1 00

Bead-work:

First premium, Mrs. J. A. Gorbach, Fairbury	2 00
Second premium, Mrs. A. E. Petherbridge, Peoria	1 00

Mosiac or Papier-Maché Work·

First premium, Mrs. H. B. Barnard, Pekin	2 00

Agricultural Wreath:

First premium, Mrs. H. B. Barnard, Pekin	2 00

Landscape in Moss:

Premium, Mrs. L. E. Rockwell, Quincy	Silver Medal

Shell-work wreath.

First premium, Mrs. H. B. Barnard, Pekin	2 00
Second premium, Mrs. H. B. Barnard, Pekin	1 00

Collection of articles above enumerated, shown by one exhibitor·

Premium, Mrs. H. B. Barnard, Pekin	10 00

Awarding Committee—Miss Alice J. Heading, Peoria; Mrs. J P. Heading, Peoria; Mrs. Jennie Johnson, Peoria·

CLASS K—TEXTILE FABRICS.

E. H. BISHOP, *Superintendent.*

LOT 105—MILL FABRICS, ETC.—No Entries.

LOT 106—HOUSEHOLD FABRICS—ALL WOOL.

Ten yards of Flannel

First premium, Mrs. Wm. Horton, Weston	$4 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00

Pair of Blankets

First premium, Mrs. P. D. Stagg, Greensburg, Ind	5 00
Second premium, Mrs. P D. Stagg, Greensburg, Ind	3 00

Display of Yarns

First premium, Mrs Wm Horton, Weston	3 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00

Pair of Ladies Stockings

First premium, Mrs. Wm. Horton, Weston	3 00
Second premium, Miss Anna Miller, Quincy	2 00

Pair of Men's Socks·

First premium, Mrs. P. D. Stagg, Greensburg, Ind	3 00
Second premium, Mrs. Wm. Horton, Weston	2 00

Pair of Gloves·

First premium, Mrs. Wm. Horton, Weston	3 00

Pair of Mittens

First premium, Mrs. W. R. Sprague, Reynoldsburg Ky	3 00
Second premium, Mrs. L. E. Rockwell, Quincy	2 00

MIXED WOOL AND COTTON.

Coverlet:	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	$5 00
Second premium, Mrs. J. Nearing, Kenney	3 00
Ten yards of Jeans:	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	5 00
Ten yards Linsey:	
First premium, Mrs. J. Nearing, Kenney	4 00
Second premium, Mrs. J. Nearing, Kenney	2 00
Ten yards of Carpet:	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	5 00
Second premium, Mrs. J. Nearing, Kenney	3 00
Ten yards of Rag Carpet:	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	5 00
Second premium, Miss Annie Miller, Quincy	3 00
Foot-Mat, made of wool:	
First premium, Miss M. O. Bestor, Peoria	3 00
Carpet Warp, spun by exhibiter:	
First premium, Mrs. J. Nearing, Kenney	2 00
Parlor Rug, raised wool-work:	
First premium, F. W McClellan, Elvaston	3 00
Second premium, Mrs. J. Nearing, Kenney	2 00
Hearth Rug, wool	
First premium, Mrs. R. B. Amsbary, Sheldon	3 00
Second premium, Mrs. J. Nearing, Kenney	2 00
Hearth Rug, rags	
First premium, Mrs C. Hinsey, Pekin	3 00
Carriage Mat:	
First premium, Mrs. J. Nearing, Kenney	3 00
Second premium, Mrs. R. B. Amsbary, Sheldon	2 00

Awarding Committee - Mrs. S. M. Bruns, Kewanee, Mrs. R. F. Kent, Peoria, Mrs. A. S. Landon, Wheaton.

LOT 107 HAND SEWING.

Comprising Plain Garments.

Coarse Shirt, unbleached:	
First premium, Mrs. L E. Rockwell, Quincy	$3 00
Second premium, E L. Bosserman, Indianapolis, Ind	2 00
Fine Shirt, unwashed	
First premium, Mrs. Libbie M Thomas, Terre Haute, Ind	3 00
Second premium, E. L. Bosserman, Indianapolis, Ind	2 00
Plain Night Dress	
First premium, Mrs. Jas R. Cottle, Princeton	3 00
Second premium, Mrs. Z. K. Waldron, Princeton	2 00
Plain Chemise:	
First premium, Mrs. E. L. Gillham, Merritt	3 00
Second premium, E. L. Bosserman, Indianapolis, Ind	2 00
Calico Dress:	
First premium, Miss Annie Miller, Quincy	3 00
Second premium, Mrs. R. H. Gaston, Toulon	2 00
Pair of Pants:	
First premium, Mrs. L. E. Rockwell, Quincy	3 00
Second premium, Mrs. Wm. Horton, Weston	2 00
Vest:	
First premium, Mrs. Wm. Horton, Weston	3 00
Second premium, Mrs. L. E. Rockwell, Quincy	2 00
Boy's Suit:	
First premium, Mrs. J. F. Robinson, Atlanta	3 00
Darning and Repairing:	
First premium, Mrs. E. L. Gillham, Merritt	3 00
Second premium, Mrs. J. A. Gorbach, Fairbury	2 00

Kitchen Apron :	
First premium, Miss Maude C. Hinsey, Pekin	$2 00
Second premium, Mrs. Jas. R. Cottle, Princeton	1 00

Awarding Committee—Mrs. H. D. Evans, Lovington; Mrs. R. W. Minkler, Cazenovia; Mrs. A. M. Wright, Eureka.

LOT 108—ORNAMENTAL NEEDLE-WORK.

Braiding :	
First premium, Mrs. E. L. Gillham, Merritt	$3 00
Second premium, Mrs. J. Nearing, Kenney	2 00
Braided Pillow-Case or Sham	
First premium, Miss Anna Miller, Quincy	3 00
Second premium, Mrs. L. Beckwith, Pekin	2 00
Hemstitching	
First premium, Mrs. Libbie M. Thomas, Terre Haute, Ind	3 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00
Silk Embroidery :	
First premium, Mrs. Libbie M. Thomas, Terre Haute, Ind	3 00
Second premium, Mrs. W. R. Sprague, Reynoldsburg, Ky	2 00
Worsted Embroidery	
First Premium, Mrs. Libbie M. Thomas, Terre Haute, Ind	3 00
Second premium, Miss M. M. Hodges, Peoria	2 00
Cotton Embroidery :	
First premium, Mrs. P. F. Warner, Aledo	2 00
Second premium, Mrs. Cellie Keene, Atlanta	1 00
Silver Embroidery	
First premium, Mrs. Fred Fisher, Springfield	3 00
Second premium, Mrs. Fred. Fisher, Springfield	2 00
Gold Embroidery	
First premium, Miss Anna Miller, Quincy	3 00
Second premium, Mrs. Fred. Fisher, Springfield	2 00
Linen Embroidery :	
First premium, Mrs. Libbie M. Thomas, Terre Haute, Ind	2 00
Second premium, Mrs. Libbie M. Thomas, Terre Haute, Ind	1 00
Embroidered Cover for Chair	
First premium, Mrs. W. R. Sprague, Reynoldsburg, Ky	4 00
Second premium, Miss Maude Stone, Princeton	2 00
Chair Cover Back and Seat	
First premium, Mrs. Fred Fisher, Springfield	4 00
Second premium, Miss Anna Miller, Quincy	2 00
Cover for Ottoman	
First premium, Mrs. Fred Fisher, Springfield	4 00
Second premium, Miss Kate Waldron, Princeton	2 00
Sofa Pillow:	
First premium, Mrs. Fred Fisher, Springfield	4 00
Second premium, Carry E. Fearn, Decatur	2 00
Carriage Afghan.	
First premium, Miss A. M. Dodge, Peoria	8 00
Second premium, Miss Anna Miller, Quincy	4 00
Infant Afghan:	
First premium, Miss Anna Miller, Quincy	4 00
Second premium, Miss Anna Miller, Quincy	2 00
Infant Robe	
First premium, Mrs. L. Beckwith, Pekin	4 00
Second premium, E. L. Bosserman, Indianapolis, Ind	2 00
Toilet Set, Embroidered:	
First premium, Mrs. L. Beckwith, Pekin	3 00
Second premium, Mrs. W. R. Sprague, Reynoldsburg, Ky	2 00
Infant Skirt, Embroidered.	
First premium, Mrs. L. Beckwith, Pekin	3 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00

Worsted Tapestry Work:	
First premium, Mrs. Jas. R. Cottle, Princeton	$3 00
Second premium, E. L. Bosserman, Indianapolis, Ind	2 00
Japanese Tidy:	
First premium, Mrs. W. R. Sprague, Reynoldsburg, Ky	2 00
Embroidered Lace Tidy:	
First premium, Mrs. L. Beckwith, Pekin	3 00
Second premium, Mrs. Fred Fisher, Springfield	2 00
Embroidered Silk Tidy:	
First premium, Mrs. Fred Fisher, Springfield	3 00
Second premium, Mrs. M. S. Daggett, Paxton	2 00
Worsted Tapestry Picture:	
First premium, Mrs. Libbie M. Thomas, Terre Haute, Ind	4 00
Second premium, Mrs. Jas. R. Cottle, Princeton	2 00
Bead Embroidery;	
First premium, Mrs. P. D. Stagg, Greensburg, Ind	3 00
Stamping for Embroidery:	
First premium, Miss M. O. Bestor, Peoria	2 00
Second premium, Mrs. J. Nearing, Kenney	1 00
Guipure Lace:	
First premium, Miss Maude O. Hinsey, Pekin	2 00
Second premium, Miss M O. Bestor, Peoria	1 00
Embroidered Pillow Case or Sham:	
First premium, Miss Maud C. Hinsey, Peoria	3 00
Second premium, Mrs. Libbie M. Thomas, Terre Haute, Ind	2 00
Chenille Embroidery	
First premium, Mrs. L. E. Rockwell, Quincy	3 00
Second premium, Mrs. Will Mason, Jacksonville	2 00
Lambrequin for Window	
First premium, Miss Anna Miller, Quincy	3 00
Lambrequin for Mantle	
First premium, Carrie E. Fearn, Decatur	3 00
Second premium, Mrs. Alex. Pickens, Farmington	2 00
Lambrequin for Bracket	
First premium, Mrs. M. S. Daggett, Paxton	3 00
Second premium, Mrs R. B. Pollard, Springfield	2 00
Embroidered Piano Cover	
First premium, Miss A. M. Dodge, Peoria	4 00
Embroidered Table Cover:	
First premium, Mrs. Fred Fisher, Springfield	3 00
Second premium Mrs. W R Sprague, Reynoldsburg, Ky	2 00
Lap Robe	
First premium, Mrs. L. Beckwith, Pekin	3 00
Darned Net	
First premium, Carrie E. Fearn, Decatur	3 00
Second premium, Miss Jennie Schnebly, Peoria	2 00

WORK DONE ON MACHINE.

Embroidery:	
First premium, Domestic Sewing Machine Co., Chicago	3 00
Second premium, Mrs J Nearing, Kenney	2 00
Tucking:	
First premium, Domestic Sewing Machine Co., Chicago	2 00
Second premium, Mrs L. E. Rockwell, Quincy	1 00
Braiding:	
First premium, Domestic Sewing Machine Co, Chicago	2 00
Second premium, Mrs. J. F. Robinson, Atlanta	1 00
Quilting	
First premium Domestic Sewing Machine Co., Chicago	2 00
Second premium, Mrs. L. E. Rockwell, Quincy	1 00

Awarding Committee—Mrs. H. H. Cole, Peoria; Mrs. L. Stansbury, Galesburg; Mrs. H Knowles, Peoria.

LOT 109—FANCY WORK.

Honiton Lace:

First premium, Miss Maude C. Hinsey, Pekin	$3 00
Second premium, Mrs. Libbie M. Thomas, Terre Haute, Ind	2 00

Applique Lace:

First premium, Mrs. L. E. Rockwell, Quincy	3 00
Second premium, Miss Maude C. Hinsey, Pekin	2 00

Point Lace:

First premium, Miss Maude C. Hinsey, Pekin	3 00
Second premium, Mrs. L. Beckwith, Pekin	2 00

Lamp Mat:

First premium, Miss Maude C. Hinsey, Pekin	2 00
Second premium, Mrs. Wm. Horton, Weston	1 00

Watch Case:

First premium, Mrs M. S. Daggett, Paxton	2 00
Second premium, Miss Maude C. Hinsey, Pekin	1 00

Slipper Case.

First premium, Mrs. L. Beckwith, Pekin	2 00
Second premium, Mrs. L. E. Rockwell, Quincy	1 00

Card Receiver.

First premium, Miss Anna Miller, Quincy	2 00
Second premium, Mrs. J. F. Robinson, Atlanta	1 00

Needle-Case

First premium, Miss M. O. Bestor, Peoria	2 00
Second premium, Mrs. C. Hinsey, Pekin	1 00

Tidy in Wool:

First premium, Mrs. P. D. Stagg, Greensburg, Ind	3 00
Second premium, Miss Lottie E Keck, Peoria	2 00

Tidy in Cotton :

First premium, Miss H. M Heading, Peoria	3 00
Second premium, Mrs Mary A. Fox, Farmington	2 00

Crochet Work in Worsted:

First premium, Mrs. D. C. Bishop, Mapleton	2 00
Second premium, Mrs. E. A. Long, Peoria	1 00

Crochet Work in Cotton:

First premium, Mrs L. E Rockwell, Quincy	2 00
Second premium, Miss Lizzie Richmond, Peoria	1 00

Crochet Work in Linen

First premium, Mrs. J. Nearing, Kenney	2 00
Second premium, Mrs. Wm. Horton, Weston	1 00

Crochet Work in Silk:

First premium, Miss Maude C. Hinsey, Pekin	2 00
Second premium, Mrs. Wm. Horton, Weston	1 00

Netting :

First premium, Miss M. O. Bestor, Peoria	2 00
Second premium, Mrs P. D. Stagg, Greensburg, Ind	1 00

Pin Cushion:

First premium, Mrs P. D. Stagg, Greensburg, Ind	2 00
Second premium, Mrs. J. H. Atwood, Canton	1 00

Toilet Cushion

First premium, Miss Alice J. Heading, Peoria	2 00
Second premium, Mrs. L. Beckwith, Pekin	1 00

Work Basket

First premium, Mrs. H. B. Barnard, Pekin	2 00
Second premium, Mrs. C. Hinsey, Pekin	1 00

Scrap Basket.

First premium, Miss M. O. Bestor, Peoria,	2 00
Second premium, Miss Maude C. Hinsey, Pekin	1 00

Wash-Stand Set

First premium, Miss Anna Miller, Quincy.	2 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	1 00

Air Castle

First premium, Miss M. O. Bestor, Peoria	2 00
Second premium, Mrs. H. B Barnard, Pekin	1 00

Awarding Committee—Mrs. J. F. Schipper, Pekin; Miss May E. Thomas, Peoria; Miss Clara E. Case, Tremont.

LOT 110—NEEDLE WORK.

By girl under 14 years of age.

Plain Sewing ·	
First premium, Anna Stagg, Greensburg, Ind	$2 00
Second premium, Elva Nearing, Kenney	1 00
Fine Shirt, unwashed	
First premium, Elva Nearing, Kenney	2 00
Second premium, Lou Keene, Atlanta	1 00
Coarse Shirt, unbleached :	
First premium, Iva E. Robinson, Atlanta	2 00
Second premium, Elva Nearing, Kenney	1 00
Plain Chemise :	
First premium, Lou Keene, Atlanta	2 00
Second premium, Elva Nearing, Kenney	1 00
Hand-made Calico Dress :	
First premium, Lou Keene, Atlanta	2 00
Patch-work Quilt :	
First premium, Iva E. Robinson, Atlanta	2 00
Second premium, Elva Nearing, Kenney	1 00
Darning and Repairing	
First premium, Lou Keene, Atlanta	2 00
Second premium, Gladez Barnard, Pekin	1 00
Braiding	
First premium, Lou Keene, Atlanta	2 00
Second premium, Gladez Barnard, Pekin	1 00

FANCY WORK.

Tidy in Wool ·	
First premium, Emma Nohe, Quincy	2 00
Second premium, Anna Stagg, Greensburg, Ind	1 00
Tidy in Cotton :	
First premium, Anna Stagg, Greensburg, Ind	2 00
Second premium, Elva Nearing, Kenney	1 00
Darned Net	
First premium, Emma Nohe, Quincy	2 00
Second premium, Emma Nohe, Quincy	1 00
Tatting	
First premium, Elva Nearing, Kenney	2 00
Second premium, Lou Keene, Atlanta	1 00
Silk Embroidery	
First premium, Lou Keene, Atlanta	2 00
Second premium, Emma Nohe, Quincy	1 00
Cotton Embroidery	
First premium, Elva Nearing, Kenney	2 00
Second premium, Lou Keene, Atlanta	1 00
Worsted Tapestry	
First premium, Emma Nohe, Quincy	2 00
Second premium, Elva Nearing, Kenney	1 00
Crochet Work	
First premium, Elva Nearing, Kenney	2 00
Second premium, Emma Nohe, Quincy	1 00
Cardboard Work·	
First premium, Helen A. Young, Monmouth	2 00
Second premium, Elva Nearing, Kenney	1 00
Lamp Mat.	
First premium, Iva E. Robinson, Atlanta	2 00
Second premium, Elva Nearing, Kenney	1 00
Toilet Set, embroidered:	
First premium, Anna Stagg, Greensburg, Ind	2 00
Second premium, Iva E. Robinson, Atlanta	1 00
Needle Case:	
First premium, Gladez Barnard, Pekin	2 00
Second premium, Iva E. Robinson, Atlanta	1 00

Comb Case:

First premium, Iva E. Robinson, Atlanta	$2 00
Second premium, Gladez Barnard, Pekin	1 00

Button String:

First premium, Lou Keene, Atlanta	2 00
Second premium, Iva E. Robinson, Atlanta	1 00

KNITTING WORK.

Pair of Men's Socks:

First premium, Anna Stagg, Greensburg, Ind	2 00
Second premium, Anna Stagg, Greensburg, Ind	1 00

Pair Ladies Stockings:

First premium, Anna Stagg, Greensburg, Ind	2 00
Second premium, Lou Keene, Atlanta	1 00

Pair Mittens:

First premium, Elva Nearing, Kenney	2 00
Second premium, Gladez Barnard, Pekin	1 00

Pair Gloves:

First premium, Lou Keene, Atlanta	2 00

Scarf:

First premium, Anna Stagg, Greensburg, Ind	2 00
Second premium, Emma Noho, Quincy	1 00

Awarding Committee—Miss Nettie Sartle, Peoria; Nellie Lynch, Peoria; Miss Alice M. Dodge, Peoria; Mrs. W. R. Fairbanks, Lacon; Mrs. Fred. Fisher, Springfield.

LOT 111—QUILTS AND NEEDLE WORK.

Patch-work Calico Quilt

First premium, Mrs. Cellie Keene, Atlanta	$4 00
Second premium, Mrs. W. H. Meeker, Farmington	2 00

Patch-work Silk Quilt:

First premium, Mrs. C Hinsey, Pekin	8 00
Second premium, Mary Flint, Peoria	4 00

White Quilt, Solid on Muslin

First premium, Mrs. P D. Stagg, Greensburg, Ind	4 00
Second premium, Mrs. J. Nearing, Kenney	2 00

Worsted Quilt:

First premium, Mrs Libbie M. Thomas, Terre Haute, Ind	4 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00

Domestic Counterpane

First premium, Mrs. P. D. Stagg, Greensburg, Ind	4 00
Second premium, Mrs. W. R. Sprague, Reynoldsburg, Ky	2 00

Crochet Counterpane

First premium, Miss Maude C. Hinsey, Pekin	4 00
Second premium, Mrs. J Nearing, Kenney	2 00

Knit Counterpane.

First premium, Mrs. Mary C. Stevens, Peoria	4 00
Second premium, Mrs. W. H. Meeker, Farmington	2 00

Fine Night Dress.

First premium, Mrs. J Nearing, Kenney	3 00
Second premium, Mrs W. R. Sprague, Reynoldsburg, Ky	2 00

Fine Skirt:

First premium, Mrs. W. R. Sprague, Reynoldsburg, Ky	3 00
Second premium, Mrs. P. D. Stagg, Greensburg, Ind	2 00

Fine Chemise:

First premium, Mrs. J. Nearing, Kenney	3 00
Second premium, Mrs. W. R. Sprague, Reynoldsburg, Ky	2 00

Awarding Committee—Mrs. L. Stansbury, Galesburg; Mrs. Sarah E. Blanchard, Fond-du-lac; Mrs. H. Knowles, Peoria.

CLASS L—NATURAL HISTORY.

JOHN P. REYNOLDS, *Superintendent.*

LOT 112—TAXIDERMY, MINERALOGY AND CONCHOLOGY.

Collection of Minerals and Fossils:	
First premium, W. H. Chapman, Peoria	$50 00
Collection Illinois Birds and Mammals, 50 species, shown by the taxidermist:	
First premium, F. H. Camp, Brimfield	40 00
Collection illustrating the Conchology of Illinois—100 species	
First premium, W. H. Chapman, Peoria	20 00
Second premium, R. H. Spader, Atlanta	10 00
Display of Mound Relics:	
First premium, Jackson Shepherd, Hilton	50 00
Second premium, R. H. Spader, Atlanta	20 00

Awarding Committee—E. H. Hunt, Chicago; F. P. Dilger, Chicago; E. M. Schnebly, Peoria.

LOT 113—ENTOMOLOGY, ETC.

Collection of Insects	
First premium, Wm Braddock, Springfield	$30 00
Second premium, Wm. Braddock, Springfield	15 00
Collection representing the Botany of Illinois	
First premium, Miss Alice J. Heading, Peoria	20 00
Second premium, Miss Helen Brendel, Peoria	10 00

Awarding Committee—Mrs. W. H. Crowe, Peoria, Mrs. F. H. Camp, Brimfield; J. W. Crowe, Mossville, A. A. Stevens, Peoria.

CLASS M—SPEED.

D. E. BEATY, *Superintendent.*

LOT 114—SPEED RINGS.

RUNNING RACE—STAKE $100.

Age, two and under three years. Half mile heats, best two in three—3 entries	
First premium, Wm. Brady, Peoria	$78 00
Bay filly, Petona Berry, bred by J. A. Gunsted, Philadelphia, Pa.; owned by —— Stone; sire, Imp. Stadmor; dam, ——, by West Australia.	
Second premium, L. W. Benson, Maquon	39 00
Bay filly, Lule; owned and bred by L. Benson, Maquon; sire, Pat Maloy; dam, ——, by West Roxbury.	
Third premium, Whitten Bros., Wilmington	13 00
Bay Mare; Oakland Grove Rose; sire, Lochiel; dam, Melrose, by Melbourne.	

Judges—Wm. Babcock, Sr., Canton; P. H. Dorsey, Bunker Hill; A. J. Caton, Chicago.

TROTTING STALLIONS—STAKE $200.

Open to all that have made a season in 1881—5 entries:	
First premium, Addison Doughty, Chicago	$180 00
Bay stallion, Romeo; bred by James Wadsworth, Chicago; sire, Menelaus; dam, Dolly Martin, by Defiance.	
Second premium, J. S. Roberts, Franklin	90 00
Black stallion, General Lee, sire, Black Sultan; dam, ——, by Hiram.	

Third premium, H. C. Hayes, Lexington $30 00
Prospect; bred by E. R. Moody, Eminence, Ky.; sire, Bloody Chief; dam, Susie Jones, by Ashland Chief.

Judges—O. C. Parmely, Peoria; Wiley Buckles, Champaign; Wm. Babcock, Sr., Canton.

TROTTING RACE—STAKE $200.

Age, two and under three years. Half mile heats, best two in three—8 entries.
First premium, Caton Stock Farm, Joliet $156 00
Bay gelding, St. Patrick; bred by P. S. Barber, Bardstown, Ky.; sire, Kentucky Rocket; dam, Flora, by John Bell.

Second premium, P. H. Dorsey, Bunker Hill 78 00
Bay stallion, Small Hope, bred by P. H. Dorsey, Bunker Hill; sire, Membreno Autocrat; dam, Maggy Gold Dust.

Third premium, J. P McQuaid, Canton 26 00
Blue mare, Silver Leaf, bred by J. P. McQuaid, Canton; sire, Geo. Higby; dam, ——, by Clay Trustee.

Judges—O. C. Parmely, Peoria; Wiley Buckles, Champaign, Wm. Babcock, Sr., Canton.

TROTTING RACE—STAKE $150.

Age, four and under five years—5 entries
First premium, O W. Bridges, Carrollton $135 00
Bay stallion, Pilot St. John; sire, Thumberbolt; dam, Capt. Walker.

Second premium, C. H. Culp, Jacksonville 67 50
Black mare, Etta May, sire, Charlie Hammett

Third premium, Crawley & Schenck, Peoria 22 50
Sorrel mare, bred by L. L. Dorsey, sire, Gold Dust, Jr.; dam, Anna Clay.

Judges- W. T. Dowdall, Peoria; Wiley Buckles, Champaign, M. T Stookey, Belleville.

TROTTING RACE—STAKE $150.

Age, three and under four years Mile heats, best two in three—6 entries
First premium, Caton Stock Farm, Joliet $144 00
Brown filly, True Blue, sire, Blue Bull, dam, ——, by Pocahontas Boy.

Second premium, Wm E Ashlock, Carrollton 72 00
Steel-gray mare, Kitty Walker, sire, Kilburn Jim, Jr, dam, by Honest John.

Third premium, T M Rowley, Canton 24 00
Bay mare, Lucy Sprague; sire, Geo. Higby; dam, Lucy, by Gen. Gifford.

Judges—W. T. Dowdall, Peoria; Wiley Buckles, Champaign; M T. Stookey, Belleville.

TROTTING RACE—STAKE, $150.

Age, five and under 6 years—6 entries
First premium, O W. Bridges, Carrollton $144 00
Bay gelding, Mike Emerick; sire, Abdallah; dam, ——, by Copper Bottom.

Second premium, Chas. Schenck, Peoria 72 00
Brown gelding, Billy Schenck; sire, Jack Cork, Jr.; dam, Emma S., by Indian Chief.

Third premium, P. H. Dorsey, Bunker Hill 24 00
Little Joker; bred by P. H. Dorsey, Bunker Hill; sire, Ruby Gold Dust, dam, Alice Camille.

Judges—J. C. Bruner, Ottawa; Wiley Buckles, Champaign; W. J. Neely, Ottawa.

RUNNING RACE—STAKE, $150.

Age, three and under four years. Mile heats, best two in three—3 entries
First premium, L. Benson, Maquon $117 00
Second premium, Whitten Bros, Wilmington 58 50
Third premium, Ed. Harrison, Peoria 19 50

Judges—J. C. Bruner, Ottawa; Wiley Buckles, Champaign, W J. Neely, Ottawa.

CLASS N—EDUCATION.

EMORY COBB, *Superintendent.*

LOT 115—GRADED SCHOOL EXHIBIT.

First year work .		
First premium, Graded School, Rochelle	Diploma and	$4 00
Second premium, Graded School, Joliet		2 00
Second year work		
First premium, Graded School, Pecatonica	Diploma and	4 00
Second premium, Graded School, Limestone		2 00
Third year work		
First premium, Franklin School, Belleville	Diploma and	4 00
Second premium, Second Ward School, Springfield		2 00
Fourth year work		
First premium, Fourth Ward School, Springfield	Diploma and	4 00
Second premium, Franklin School, Belleville		2 00
Fifth year work		
First premium, Graded School, Princeville	Diploma and	4 00
Second premium, Graded School, Limestone		2 00
Sixth year work ·		
First premium, Graded School, Limestone	Diploma and	4 00
Second premium, Graded School, Joliet		2 00
Seventh year work		
First premium, Graded School, Durand	Diploma and	4 00
Second premium, Franklin School, Belleville		2 00
Eighth year work		
First premium, Franklin School, Belleville	Diploma and	4 00
Second premium, Graded School, Joliet		2 00

Awarding Committee—H. R. Edwards, Peoria; Geo. E. Knepper, Peoria; H. L Grant, Peoria.

LOT 116—COUNTRY SCHOOL EXHIBIT.

Spelling, older pupils		
First premium, Dist No 5, Logan Twp., Peoria Co	Diploma and	$4 00
Second premium, Dist. No. 2, Twp. 35, Will Co		2 00
Spelling, younger pupils		
First premium, Dist. No 4, Radnor Twp., Peoria Co	Diploma and	4 00
Second premium, Dist. No. 7, Brimfield Twp , Peoria Co		2 00
Business Forms, older pupils		
First premium, Dist. No 5, Logan Twp., Peoria Co	Diploma and	4 00
Second premium, Dist. No. 5, Twp 37, Will Co.		2 00
Letters, younger pupils ·		
First premium, Dist. No 3, Cedar Twp., Knox Co	Diploma and	4 00
Second premium, Dist No 8, Richwoods Twp Peoria Co		2 00
Geography and History, older pupils ;		
First premium, Dist No 5, Twp. 35, Will Co	Diploma and	4 00
Second premium, Dist. No. 2, Limestone Twp., Peoria Co		2 00
Geography, younger pupils .		
First premium, Dist. No. 6, Twp 2 N., St Clair Co	Diploma and	4 00
Second premium, Dist No. 1, Twp. 36, Will Co		2 00
Language, older pupils		
First premium, Dist. No. 5, Twp. 35, Will Co	Diploma and	4 00
Second premium, Dist. No. 1, Twp. 1 S., 8 W., St Clair Co		2 00
Language, younger pupils·		
First premium, Dist. No. 5, Mascoutah Twp., St. Clair county	Diploma and	4 00
Second premium, Dist. No. 1, Oneco Twp.. Stephenson county		2 00
Common Things, older pupils		
First premium, Dist. No 2, Twp. 35, Will county	Diploma and	4 00
Second premium, Dist No. 3, Brimfield Twp , Peoria county		2 00

Common Things, younger pupils:

First premium, Dist. No. 1, Twp. 35, Will county	Diploma and	$4 00
Second premium, Dist. No. 3, Cedar Twp., Knox county		2 00

Arithmetic, older pupils·

First premium, Dist. No. 5, Logan Twp., Peoria county	Diploma and	4 00
Second premium, Dist. No. 4, Kent Twp., Stephenson county		2 00

Arithmetic younger pupils·

First premium, Dist No. 3, Cedar Twp., Knox county	Diploma and	4 00
Second premium, Dist. No. 6, Twp. No. 2 N., St. Clair county		2 00

Physiology:

First premium, Dist. No. 4, Galesburg Twp., Knox county	Diploma and	4 00
Second premium, Dist. No. 3, Sumner Twp., Kankakee county		2 00

Zoölogy

First premium, Dist. No. 4, Galesburg Twp., Knox county	Diploma and	4 00

Awarding Committee—B. C. Allensworth, Minier; W. H. Smith, Bloomington; Amelia L. Halsey, Lafayette.

LOT 117—SWEEPSTAKES.

Exhibit by one Graded School, 1st grade to 8th inclusive

First premium, Graded School, Joliet	Diploma and	$10 00
Second premium, Franklin School, Belleville		5 00
Third premium, Second Ward School, Springfield		2 50

Exhibit by one Country School of all the work for which premiums 1 12, inclusive, are offered under Lot 116

First premium, Dist. No. 5, Twp. 35, Will county	Diploma and	10 00
Second premium, Dist. No 5, Logan Twp., Peoria county		5 00
Third premium, Dist. No. 1, Plainfield Twp., Will county		2 50

Set of three papers, one page each of writing, from as many pupils of the same graded school

First premium, Graded School, Braidwood	Diploma and	10 00
Second premium Franklin School, Belleville		5 00
Third premium, Graded School, Joliet		2 50

Set of three papers, one page each of writing, from as many pupils of one country school

First premium, Dist No 10, Jackson Twp., Will county	Diploma and	10 00
Second premium, Dist. No. 5, Logan Twp. Peoria county		5 00
Third premium, Dist No 3, Sumner Twp, Kankakee county		2 50

Set of five Drawings, from as many pupils of one school

First premium, Franklin School, Belleville	Diploma and	10 00
Second premium, High School, Galesburg		5 00
Third premium, Dist No. 8, Indian Point Twp, Knox county		2 50

To the Superintendent of Schools of the town or city making the best exhibit of work entered for premiums in Lot 115, and premiums 1167, 1169 and 1171 in Lot 117

Premium, Henry Raab, Superintendent City Schools, Belleville	Diploma

To the County Superintendent of Schools of the county making the best exhibit of work entered for premiums in Lot 116, and premiums 1168 and 1170 in Lot 117

Premium, J. E. Pillsbury, Superintendent of Schools, Peoria county	Diploma

Awarding Committee—B C Allensworth, Minier, W. H Smith, Bloomington, Amelia L. Halsey, LaFayette, John W. Cook, Normal, M. L Seymour, Normal, E. J. James, Normal, H R Edwards, Peoria, Geo. E. Knepper, Peoria, H. L. Grant, Peoria

LOT 118—HIGH SCHOOL EXHIBIT.

LANGUAGES.

Three papers in Latin, from pupils who have pursued the study not more than one school year, the work consisting of translation of two fables, with appropriate questions on Orthography, Etymology and Syntax

First premium, High School, Lake View	Diploma and	$4
Second premium, High School, Oakland		2 00

Three papers in Latin, the work consisting of translation of about two manuscript pages, from the first 1200 lines of Virgil's Æneid, with appropriate questions in Etymology, Syntax and Prosody, including the scansion of two lines

First premium, High School, Lake View	Diploma and	4 00
Second premium, High School, Evanston		2 00

Three papers in Greek, the work consisting of translation of about two manuscript pages from the first two books of Xenophon's Anabasis, with questions on Greek Orthography, Etymology and Syntax.
First premium, High School, Oakland .... Diploma and $4 00
Second premium, High School, Lake View 2 00

Three papers in German, the work consisting of about two manuscript pages from William Tell, with appropriate questions in German Etymology and Syntax; also, translation from English to German of at least one-half manuscript page, taken from the first seven lessons (omitting the sixth) of Appleton's Third Reader
First premium, High School, Peoria .... Diploma and 4 00
Second premium, High School, Warsaw 2 00

MATHEMATICS.

Three papers, Elementary Algebra, including work through Quadratics;
First premium, High School, Galesburg .... Diploma and 4 00
Second premium, High School, Oakland 2 00

Three papers, Advanced Algebra, covering entire subject
First premium, High School, Ottawa .... Diploma and 4 00
Second premium, High School, Evanston 2 00

Three papers, Plane Geometry.
First premium, High School, Springfield .... Diploma and 4 00
Second premium, High School, Quincy 2 00

SCIENCE.

Three papers on the Theory of Botany, accompanied by three Herbaria, each of which shall consist of at least fifty wild plants of Illinois; one, at least, of the Herbaria from the same pupils whose papers are presented.
First premium, High School, Lake View .... Diploma and 4 00
Second premium, High School, Springfield 2 00

Three papers, Physiology ·
First premium, High School, Quincy .... Diploma and 4 00
Second premium, High School, Lake View 2 00

Three papers, Zoology
First premium, High School, Springfield .... Diploma and 4 00
Second premium, High School, Quincy 2 00

Three papers, Natural Philosophy
First premium, High School, Evanston .... Diploma and 4 00
Second premium, High School, Oakland 2 00

ENGLISH LITERATURE.

Three papers in English Literature, accompanied by three Essays, written during the year, germane to the subject
First premium, High School, Lake View .... Diploma and 4 00
Second premium, High School, Oakland 2 00

ESSAY WRITING

Three Essays, on miscellaneous subjects, prepared by pupils, in connection with the regular work of the school
First premium, High School, Evanston .... Diploma and 4 00
Second premium, High School, Lake View 2 00

CIVIL GOVERNMENT.

Three papers on Civil Government
First premium, High School, Oakland .... Diploma and 4 00
Second premium, High School, Galesburg 2 00

SWEEPSTAKES

High School exhibit, containing two Languages, two Sciences, two Mathematics (or English Literature substituted for one of the Sciences):
First premium, High School, Oakland .... Diploma and 10 00
Latin and Greek; Elementary Algebra and Geometry; Natural Philosophy and English Literature.
Second premium, High School, Lake View 5 00
Latin and German; Elementary Algebra and Geometry; Natural Philosophy and Botany.

Awarding Committee—John W. Cook, Normal; M. L. Seymour, Normal; E. J. James, Normal; A. W. Beasley, Peoria.

REPORT

FOURTH ANNUAL

FAT STOCK SHOW

HELD BY THE

Illinois State Board of Agriculture,

IN THE

EXPOSITION BUILDING, CHICAGO,

NOVEMBER 7-12, 1881

ILLINOIS

STATE BOARD OF AGRICULTURE

FOR 1881-82.

President	J. R. SCOTT	Champaign
Ex-President	D. B. GILLHAM	Upper Alton
Secretary	S. D. FISHER	Springfield
Treasurer	JOHN W. BUNN	Springfield
Assistant Secretary	CHAS. F. MILLS	Springfield

Vice-Presidents:

1st Dist.	Lewis Ellsworth	Naperville
2d "	H. D Emery	Chicago
3d "	John P. Reynolds	Chicago
4th "	Geo. S Haskell	Rockford
5th "	J. L Moore	Polo
6th "	Samuel Dysart	Franklin Grove
7th "	Charles Snoad	Joliet
8th "	Emory Cobb	Kankakee
9th "	D. W. Vittum, Jr	Canton
10th "	E. B. David	Aledo
11th Dist	David E. Beaty	Jerseyville
12th "	J W. Judy	Tallula
13th "	Wm. M Smith	Lexington
14th "	Wm. Voorhies, Jr	Voorhies
15th "	E. H. Bishop	Effingham
16th "	B. Pullen	Centralia
17th "	David Gore	Carlinville
18th "	James M. Washburn	Carterville
19th "	John Landrigan	Albion

Superintendents of Departments, Etc.:

Class A—Cattle	Mr. Smith
Class B—Horses	Mr Beaty
Class C—Sheep	Mr. David
Class D—Swine	Mr. Gore
Class E—Poultry	Mr Emery
Class F—Mechanics	Messrs. Voorhies and Pullen
Marshal of the Ring	Mr Judy
General Superintendent	Mr. Vittum
Superintendent of Forage and Stalls	Mr. Moore
Superintendent of Press Department	Mr. Ellsworth

Committees:

Reception Committee .... Messrs. Scott, Gillham, Reynolds, Ellsworth and Cobb
Auditing Committee................ ....Messrs. Snoad, Dysart and Landrigan
Committee of Arrangements ....Messrs Scott, Gillham, Ellsworth, Beaty, Cobb, Dysart, Smith, Pullen, Landrigan, Haskell, Vittum and Moore.
Committee on Printing .... Messrs. Scott, Reynolds Moore and Fisher
Committee on Finance. .... Messrs. Cobb, Vittum, Smith and Beaty
Committee on Transportation ... Messrs. Scott, Gillham, Cobb, Vittum, Smith and Fisher
Committee on Fat Stock Show. .... Messrs Scott, Gillham, Cobb, Smith, Vittum, Dysart and Moore.

MEETINGS DURING THE FAT STOCK SHOW.

Exposition Building, Chicago,
Monday, November 7, 1881, 12 o'clock M.

Board met on call of the President.

Present: President Scott, Vice-Presidents Emery, Reynolds, Moore, Snoad, David, Beaty and Landrigan.

President reported that Mr. Smith, Supt. of Class A, Cattle, was sick, and would not be in attendance at the show.

On motion of Mr. Reynolds,

The President was authorized to appoint, *pro tem.*, a Supt. for Class A, Cattle.

President appointed Mr. Beaty as Supt. of Cattle during the absence of Mr. Smith.

Mr. Reynolds introduced the following resolutions, which were, on motion of Mr. Snoad, adopted.

Resolved, That the thanks of the Illinois State Board of Agriculture, and all interested in the development of meat production, and the improvement of the quality of meat animals (the prime object for which the Fat Stock Shows are held), are due and hereby tendered to his Honor, Mayor Carter H. Harrison, of Chicago, as the representative of the city, and to Hon. Irus Coy, as the representative of the Union Stock Yards, for the interesting and instructive speeches delivered at the opening of the Fourth Annual Exhibition of the Chicago Fat Stock Show.

Resolved, That the speeches be spread upon the journal, and a copy of these resolutions be sent to the gentlemen named.

President stated that C. M. Culbertson, Esq. of Chicago, had requested permission to come before the Board and present his views concerning the appointment of committeemen.

On motion of Mr. Moore,

Mr. Culbertson was invited to appear before the Board.

Mr. Culbertson stated some of the judges heretofore appointed had never had experience in butchering Hereford cattle; that the great interests at stake, and the rivalry existing among the breeders of cattle on exhibition, made it desirable to have committeemen employed that had cut up on the block creditable representatives of all the recognized beef breeds.

The President stated that the judges appointed to pass upon the stock on exhibition were practical butchers of many years' experience in buying, killing and selling the best class of cattle to be found in market. The committeemen selected had proved themselves well qualified at previous Fat Stock Shows. The superior advantages enjoyed, the result of much experience in passing upon the best class of cattle exhibited and slaughtered in this country, has, in an eminent degree, peculiarly fitted these gentlemen to intelligently and critically, and without prejudice, pass upon the various breeds of cattle and their crosses.

On motion of Mr. Landrigan,

The Board adjourned, subject to the call of the President.

EXPOSITION BUILDING, CHICAGO,
WEDNESDAY, NOV. 9, 1881, 10 o'clock A. M.

Board met on call of the President.

Present: President Scott, Vice-Presidents Emery, Reynolds, Moore, Snoad, Cobb, Vittum, David, Beaty, Judy, Gore, Washburn and Landrigan.

The President called attention to the fact that all the expert committeemen employed by the Board had been used to break the tie vote in the ring for grade steers three and under four years of age; that each of the three members of the original committee selected an animal, and that the examination by the other judges had been confined to the three animals first voted upon.

It was further stated that the precedents of the Board had been to select judges for the sweepstakes rings that had not passed upon the class rings, and that the exhibiters of Hereford cattle objected to having any of the regular committeemen that had acted pass upon the sweepstakes and grand sweepstakes rings.

Mr. Vittum introduced the following preamble and resolutions, which were adopted on motion of Mr. Snoad:

WHEREAS, The qualification of judges employed to pass upon the stock on exhibition has not been questioned, and,

WHEREAS, All of the judges have been used in deciding a tie vote as to the merits of only three steers in the ring for grades and crosses three and under four years of age, and, excepting the three original committeemen, are in no way compromised in their judgment as to the comparative merits of all the animals entered in the sweepstakes or grand sweepstakes rings, therefore, be it

Resolved, That the President be authorized to select committeemen to pass upon the sweepstakes and grand sweepstakes rings in the cattle department from the experts employed, without regard to their having served in the contested ring

Resolved, That the committees on sweepstakes and grand sweepstakes rings consist of five judges, the majority of whom shall be other than the original committee which passed on the ring for grades or cross bred steers three and under four years of age.

On motion of Mr. Landrigan,

The Board adjourned, subject to the call of the President.

OPENING EXERCISES,

FOURTH ANNUAL FAT STOCK SHOW.

President Scott called the attention of the large audience in attendance to the good results attending the previous exhibitions of fat stock, not only to the breeders and feeders of meat animals, but to the business interests of the city of Chicago. The shows were inaugurated four years ago, for the purpose of aiding in the work of developing the meat producing interests of this continent.

After thanking the business men of the city of Chicago, and the officers of the Union Stock Yards and live stock commission men, for liberal contributions made of time, money and influence, his honor, Mayor Carter Harrison, of Chicago, was introduced, and spoke as follows:

MR PRESIDENT, DIRECTORS, LADIES AND GENTLEMEN It gives me much pleasure to meet you here to-day; and, in behalf of the city of Chicago, to welcome you and yonder exhibit of fat stock to our midst. I know you do not expect of me a learned disquisition upon the subject of fat cattle And yet I am not quite as new to the subject as you would naturally suspect. For I was bred upon a blue-grass farm, grew up among fine stock, and until I attained the age of thirty years, was a breeder and exhibiter of thoroughbred short horns It is a source of no small satisfaction to me that my name appears in the American Herd-book as the breeder of animals whose pedigrees appear therein When I crossed the ocean first as a young man one of the chief pleasures I anticipated was the visiting the renowned herds of England and much of my keenest pleasure on the mother island was in associating with well-bred Dutchess and other high-born families of Durham cattle

Indeed, I may say that a Duke of York bull elicited more of my admiration than a Duke of Devonshire man, and some of you ladies will, I fear, feel disgusted when I admit that I had more satisfaction in discussing the good points of a mild-eyed, soft-coated, well-bred Lady Arabella in the cow-stables, than in being condescendingly smiled upon by some Lady Jane in the mansion. This, however, may have arisen from my republican education

Gentlemen, the State of Illinois, and indeed the whole Northwest, is to be congratulated upon the fact that the Chicago Fat Stock Show has fallen into so good hands—into hands of men who know not how to fail—men who in spite of great obstacles and discouragements, have pushed bravely on, until this the fourth annual show, gives every promise of complete success I like their pluck and energy, and I like the cause in which their pluck and energy have been used.

A fat stock show is eminently a proper thing, and above all is it eminently a proper thing here in Chicago. For many years, in various States of the Union, agricultural and cattle exhibitions have been made successful Fine breeds of cattle have been shown, and splendid specimens of various breeds have been candidates for premiums But an animal bred for meat production cannot exhibit his good points, unless the meat and fattening qualities be properly developed The result has been that many of the finest bulls and heifers in the land have been distroyed as breeders by the undue laying on of fat, done for the purpose of bringing out the good points. I remember a noble six thousand dollar animal in this way utterly ruined, and many others of brilliant promise which had to leave the breeding farms, and become simply feeders because their owners made them candidates for premiums. I remember too, once helping to eat an eighteen hundred dollar heifer, which had taken several premiums at the expense of her breeding qualities and which was finally roasted at a barbecue given in honor of Kentucky's favorite, Henry Clay

Moreover, when a breeder shows a splendid animal at an ordinary fair, he has to submit it simply to the eye or hand test Seeing and handling may bring out a pretty good award, but after all it is a kind of expert guessing. Where the best meat is laid and the true juiciness of that meat, can only be fully determined when the crucible of the butcher's block is reached You can read a pedigree which has no flaw, you can see a beautiful coat and feel a soft hide, but the depth upon the rib or the streaked loin can only be measured under the knife test Yonder stands a magnificent bullock. He has grown nearly two pounds a day since he was calved His hide is so soft that when you lift it there is a touch of thick well-dressed buckskin You press upon the rib, and as the hand goes down you mutter, 'five or six inches' You measure the great length of loin, depth of brisket and breadth of rump, but the butcher alone can tell how much of that daily growth is juicy meat—how much is tallow and how much offal must be thrown away He alone can tell whether the meat growth has been where the choicest cuts are to be had or have been piled where the coarse meat is to be found

"The proof of the pudding is in chewing the bag." That is very old. Change it, and it will be equally true. The proof of the bullock is the cutting on the block. There alone is the real, final, inexorable test. These tests cannot be made at the ordinary agricultural and cattle fairs. Here, however, you have specimens from the various breeds. You have the ages; the daily growth. The practical eye and hand can tell whether they be good feeders, but before the judges make the last and final award, the crucial test of the cleaver and butcher's knife will be submitted and weighed.

This Fat Stock show fills the gap between first breeder and feeder—between the farmer and consumer, the want of which has been felt in this country, and which in England was filled by the Smithfield shows many years ago. That show the farmer and the merchant, the mechanic and the nobleman, attends with each year a growing interest.

You, gentlemen managers, are to be congratulated upon the fact that feeders and breeders have come forward so handsomely to make your endeavors a success. What a magnificent display meets the eye in yonder long rows of stalls! I said I was an old herder of Shorthorns, and believed that they were the only really fine breed to tie to. I remember once, on one of my tramps afoot, long years ago, through the midland counties of England, I dropped in upon the owner of a fine farm. I called in more particularly to look at some grand Cotswolds I had seen from the road. After introducing myself as a wanderer from far-off Kentucky, and after looking at his sheep, he proposed to show me his cattle. I then told him I was a Shorthorn man. He absolutely looked at me with a sort of contempt, and, I thought, wished he could get back the cheese and wine with which he had lunched me Then he said. "I would shoot a Durham bull which should get upon my farm." He was a Hereford man. In subsequent tramps I found the same feeling existed among the breeders of Devons, and Ayershires. Each breeder felt towards his own pets much as the ladies do about their individual sewing machines. Is there one of you, ladies, who is not absolutely sure that her machine is the one—and the only one—worth having? Men have much the same ideas about their breeds of cattle.

Walking among those great, white-faced Herefords yonder, so clean-faced, with fat upon ribs in deep, soft, pulpy rows—skins as soft as my lady's Turkish rug—I came to the conclusion that the Hereford fellows might be right Don't cheer too loud, my Hereford boys, I am not through. For closely following are the deep red Devons, clean limbed, round, plump, fat laid on so evenly—nowhere any excess—from neck to hock good cuts to be found, so handy in their solid coats I'am sure I must drop my ballot in the Devon box Then comes my own favorite Shorthorns, long and straight-backed, a moderate bowling yard, deep in brisket and flank, as if unwilling any daylight should pass between them and the green sward; long in the loin; meat enough between the flank and tail to feed the Palmer House; hide marked as if an artist had worked the design. Ah! I know now that the Durham is the king of fat cattle. But hardly had I acknowledged my allegiance, when my eye fell upon the Black Prince, the Polled Angus—all the excellences of all the others—everything but the horns for goring each other's sides. I give it up. They are all the best And if ever I am the heir of Vanderbilt I shall have a farm devoted to each. But before I get through I must say that, for improving the wild cattle of the plains and of Texas, there is nothing like a free admixture of Shorthorn blood. Grade Durhams beat all other grade cattle If any of you doubt this assertion, go and examine Mr Gillett's splendid herd of steers taken from off his grass farm.

What a contrast between the animals to be seen here to-day, and the ordinary cattle brought to the Stock Yards! Long, hairy-faced sheep, with legs made for jumping logs and fleeces hanging like the dress of a real tom-boy girl How different from these great Cotswolds, which look like a mass of beautiful wool, with a pair of clean legs put below just for fun! Compare the gaunt hog of the backwoods, with long jaws hewn out for digging among roots for hidden acorns, and one of yonder Berkshires, a mere mass of streaked fat and lean, all put up in a symmetrical heap! Then put a Texas steer, with all the fat which a summer's grass and forty bushels of corn can put on him, and yet he stands a huge pair of horns, with enough of ragged form to prop the horns in—put him beside one of those sleek fellows over behind you, whose record shows such a marvelous growth! I notice among them all no record comes under $1\,{}^{50}/_{100}$ pounds per day, and one $2\,{}^{18}/_{100}$ pounds per day. If it were possible to cut off each day's growth, and keep the animal alive, several of them would have furnished a ration for three soldiers.

A classic legend comes down to us from old Greece, that a strong man carried a calf a certain distance a day. His strength grew with the growth of the calf, so that he was enabled to carry it when an ox, upon his back What a time the old hero would have had if the calf had been one of these Durhams or Herefords! Even Grecian imagination would have failed to work up the classic fib.

Gentlemen, I said the Northwest was to be congratulated upon the successful management of this Fat Stock Show. But above all is Chicago to be congratulated She, of all other points on the continent, should take an interest, and a deep interest, in the success of the enterprise. She is the greatest live-stock market of the world Rapid though her own growth has been, yet the growth of this interest has far outpaced the city's growth I came here twenty-six years ago I remember the feeling of pride we had when, in the winter of '55-'56, the records showed we had packed 56,000 hogs Cincinnati and Louisville were then the great packing points; the former boasting of being the great Porkopolis of the continent. Now Chicago packs more than all the river towns put together—aye, more than all the northwestern cities and towns put together. Over 7,000,000 swine each year pass through our stock yards, and about 6,000,000 are here turned to meat to help feed a hungry world; 1,400,000 neat cattle are here packed, and some 335,000 sheep are slaughtered. Take these animals and put them in a line, moving with the sun around the world—place them as closely, one after the other, as they could comfortably walk, and the beginning and ending of the line would be in darkness when the sun was at its zenith over the middle of the line, for it would very considerably more than half girdle the earth.

Much of the vast prosperity of our city depends upon this one interest; more than a hundred thousand men, women and children are housed, fed and clothed throughout the year by the wages paid for the handling of this great stock interest; and it is Chicago's proud boast that the price she sets each day on a barrel of pork or a tierce of lard, is flashed along the stilly bottom of the Atlantic, and fixes the price of pork and lard throughout the commercial world,

Chicago men and women should encourage this show to the fullest, as indeed she should every other matter which interests the Northwestern farmer—for as the farmer prospers, Chicago fattens Make the farmer poor and the denizens of Chicago would starve I remember when, as a small boy, I went with my mother to town to dine with a kinsman At the table were several well-to-do town gentlemen The weather and the crops were one of the topics of conversation One gentleman said he hoped it would soon rain, for the farmer was suffering, and his prosperity was the prosperity of all This remark opened to me a new world of thought I had thought that all riches were in town We in the country could not get a pound of sugar or coffee except in town My store clothes all came from town I had always thought that we country folks depended on the town people I was not over ten years old, but I have never forgotten that great surprise

But how true it was; what would we do here if the farmer grows poor? Those lofty marble fronts, which on yonder street cut the sky with their cornices, would become the homes of bats, for the very rats would have to emigrate to the land

Ruin the farms, and some one would in a very few years sit upon the pier of Clark street bridge and draw a sketch of once proud Chicago's ruins Vanderbilt and Gould would have to ride their own rails, with no soft cushions for seats and, instead of cutting coupons and gobbling millions, they would have to go out and earn an honest day's food. There would be a sort of grim consolation in that, for neither of them has done so for many years past Chicago sits here, at the head of Lake Michigan, the gateway to the vast empire of the Northwest, and the whole Northwest pays toll to her She should do all she can to make that Northwest and its farmers rich, so that the toll may be fat and promptly paid

I think I may promise you, gentlemen directors a liberal encouragement from our people, and if my words be listened to by our merchants —by our men and women,—they will come here this week and give you a lifting hand and at the same time have a pleasant and profitable time for themselves Our young people would find much more rational enjoyment in looking at the fat sides of those cattle and the trim legs of the horses than in sitting under gas-lights to look upon the legs in stockened tights at a variety show I hope the gentlemenly reporters here by me will advise them all to come and give encourment to the farmers in producing the best breeds of stock and the best specimens in herds For in that way the farmer will prosper, and we of the city will grow fat on their prosperity

Gentlemen, to you and to all of you, I bid a hearty welcome to Chicago

Hon. Irus Coy, representing the Union Stock Yards, was next introduced, and spoke as follows:

Mr President and Ladies and Gentlemen

This grand exhibition of live-stock is an occasion of unusual interest to the people of the Northwest and ought to be witnessed by every lady and gentleman in the city of Chicago

In the Industrial Exposition just closed the people had an opportunity to witness the wonderful results of human skill in the invention of labor-saving machinery and in the manufacture of articles for use and ornament—and thousands and thousands rushed together to gaze in admiring wonder upon the perfection and beauty of manufactured articles and to-day we are permitted to witness an exhibition more interesting to the inhabitants of the great Northwest of every vocation whether agriculturist or tradesman It is the improvement judgment skill and care have made on nature in the development of domestic animals for our use and food

There is no other branch of industry so profitable, so reliable, so agreeable on so little capital and with so little anxiety as the raising of domestic animals If you attempt to increase your fortune by the manufacture of commodities either by hand or machinery, it requires your constant care The moment your eyes are off your business, or your experienced hand ceases to guide your business stops

If you turn your hand to agriculture you must plow and sow and harrow and reap and thrash or weeds will choke your tender plants in summer and your ripened harvest return to the earth in autumn But while you sit by your fire in winter while you rest in the shade in summer and while you slumber and sleep at night your flocks and herds increase and multiply, and the hunger of mankind furnishes a never failing market for your surplus stock

As Chicago is the great depot to which the world is looking for its supply of meats, anything which tends to improve or facilitate the development of live stock is of especial interest to all of us

The most skilful and successful stock growers from a thousand miles around us have brought together the choicest of their flocks not only for exhibition but to prove that with a proper selection in breeding and care in development more weight and a better quality of meat can be produced in one quarter of the time than under the old hap-hazard plan of selection and ordinary care But few of our own citizens realize the vast importance the live-stock trade bears to the wealth, commerce and prosperity of the city of Chicago

It is a source of just and commendable pride to every citizen to know that the foresight and enterprise of some of her citizens conceived the plan a few years ago of furnishing such facilities as to draw to this centre the bulk of the live-stock trade of the country It was in 1855 and 1856 that John B Sherman, who is now the manager of the Union Stock Yards and George T Williams its present Secretary foresaw the importance of this branch of business, and erected a small stock yard out on Madison street when there were no conveniences for loading or unloading live animals. Then the cattle and hogs had to jump out of the cars to the ground, be herded on the prairie during the day, driven to the Chicago River for water, and put in a yard at night, if unsold. Then there was no market except the local daily consumption. Two car-loads in a day would supply that market. But from the above small beginning they have had the satisfaction of seeing this branch of business grow and increase until this has become the greatest live-stock market of the world;—where over sixty thousand hogs are unloaded, fed, weighed and sold in a day, and ten thousand head of cattle in a day, and three thousand head of sheep;—where the stock-growers of the Western plains meet buyers from all parts of the earth. The unparalleled facilities and conveniences for the care, handling, and sale of live-stock, have induced the large retailers of meats across the ocean to establish gigantic packing-houses here, where they buy hogs of the farmer who raises them, slaughter them and pack them, and retail the meat in London and Liverpool. It has brought about the Granger's millenium, abolished the middlemen, and brought the retailer in London face to face with the farmer of Illinois

Some idea of the magnitude and importance of this branch of commerce to the city of Chicago can be realized when you know that the cash sales of live animals in the Union Stock Yards, in this city, in 1880, amounted to $143,000,000; almost one-quarter of all the paper money in circulation in the United States, both national currency and legal-tender notes, and all the gold and silver produced in the United States in 1879, would only pay for the stock sold at the Union Stock Yards in six months; and that one hundred thousand men, women and children in this city are clothed and fed, directly and indirectly, from the employment furnished by this branch of commerce alone. By the last census returns I see that all the gold and silver produced in the whole world, in 1879, only exceeded the value of the live stock sold at the Union Stock Yards in this city in 1880 by $3,000,000; and I can safely say that the annual growth of the domestic animals in the territory west of the Mississippi River, where the most of it grazes summer and winter, requiring but little care, exceeds in value the whole annual production of the gold and silver of the world. Therefore, anything which tends to improve the quality of stock, or stimulate and encourage the stock growers, is of interest and importance to the city of Chicago.

No man can tell the advantages resulting to the country from an exhibition of this kind. The very sight of those rare specimens of animal perfection stimulates and encourages all stock growers to improve their respective herds, and already the shipments from Texas, Colorado and Montana show unmistakable evidence of these influences in the kind and quality of the stock produced

I hope the people of Chicago will liberally patronize this exhibition—bring your wives and daughters, let them know that they can come here with as much safety and pleasure as they could visit the Industrial Exposition. The animals are all amply secured and the place is neat and tidy, and the show is more interesting than the ribbons and laces of the late industrial show.

EXHIBITERS.

CLASS A—CATTLE.

(The figures denote the entries of each exhibiter.)

SHORTHORNS—14 head

Canada West Farm Stock Association Brantford Can	11
Dunlap Bros	4 5
Jones Nelson Towanda	13
Morrow & Muir Clintonville Ky	8
Nelson, H C Canton	9 10 14
Potts J H & Son Jacksonville	12
Sherman John B Chicago	1 2 6 7

HEREFORD—5 head

Clark Thos Beecher	19
Miller T F Beecher	18
Miller Co T L Beecher	15 16 17

DEVONS—8 head

Rawson L Oak Creek Wis	20 21 22 23 24 25 26 27

GRADES OR CROSSES—74 head

Burleigh G S Mechanicsville Iowa	86 99
Cobb & Phillips Kankakee	98
Culbertson C M Chicago	36 73 74 75 95 101
Gillett J D Elkhart	28 29 30 31 32 33 34 35 57 61 62 63 64 65 66 67 68 69 70 71 72 100
Grant David Petersburg	81 82
Hunt T W Ashton	37 38 39 40 76 77 78 79 80 96
Miller Co T L Beecher	42 43 44 45 85
Moore A F Polo	46
Morrow & Muir Clintonville Ky	47 48 49 50 51 52 53 54 55 56
Nelson H C Canton	58 59 60 87 88 89 90 91 92 93 94
Potts J H & Son Jacksonville	97
Sherman John B Chicago	41 84
Smith D W Bates	83

CLASS B—HORSES.

NORMAN—5 head.

Crumpacker, Winters & Co., Westville, Ind	135, 136, 137, 138
McKay, David, Chicago	130

CLYDESDALE—4 head.

McKay, David, Chicago	131, 132, 133, 134

ROADSTER—1 head.

Adams, Lewis, Chicago	126

TROTTER—3 head.

Taylor, A. H., Chicago	127, 128, 129

CLASS C—SHEEP.

COTSWOLD—21 head.

Brown, J. A. & Son, Decatur	139, 140, 144, 145, 147
Hood, M. N., Guelph, Can	141, 142, 143, 146
Morgan & Cotton, Camargo	148, 149, 151
Strawn, Abner, Ottawa	152, 153, 154, 157, 158, 159
Willson, Frank, Jackson, Mich	150, 155, 156

SOUTHDOWN—12 head.

Hood, M. N., Guelph, Can	172, 173
Muir, J. V., Clintonville, Ky	163, 164
Potts, J. H. & Son, Jacksonville	160, 161, 162, 167, 168, 169, 174, 175

SHROPSHIREDOWN—5 head

Brown, J. A., & Son, Decatur	176
Morgan & Cotton, Camargo	165, 166, 170, 171

GRADES OR CROSSES—20 head.

Hood, M. N., Guelph, Can	180, 181, 184, 185, 188, 189, 190, 192, 193, 194, 196
Hudson, John, Moawequa	177, 179, 183, 186, 187, 191
Willson, Frank, Jackson, Mich	178, 182, 195

CLASS D—SWINE.

BERKSHIRE—3 head.

Scheidt & Davis, Dyer, Ind	261, 262
Taylor Bros., Waynesville	260

POLAND-CHINA—6 head.

Castle, H. C., Wilmington	263, 264, 265, 266, 267, 268

CHESTER WHITE—4 head.

Brown, J. A. & Son, Decatur	271
Taylor Bros., Waynesville	269, 270, 272

ESSEX—8 head.

Taylor Bros., Waynesville	275, 277, 280
Willson, Frank, Jackson, Mich	273, 274, 276, 278, 279

GRADES OR CROSSES—9 head.

Davis, Harry, Dyer, Ind	282
Scheidt & Davis, Dyer, Ind	283, 284, 285, 286, 287, 288
Taylor Bros., Waynesville	289
Willson, Frank, Jackson, Mich	281

QUALIFICATION OF JUDGES.

The State Board, after using all diligence and care in the selection of judges, thoroughly investigated, in open meeting, the qualifications of each committeeman as to the number of years of practical experience had as a butcher in killing and cutting up on the block of the various breeds of stock on exhibition, prejudices in favor of any of the various breeds of stock, either as a breeder or otherwise and other essential matters likely to determine his ability to critically pass upon the respective merits of the respective animals on exhibition.

AWARDING COMMITTEES.

CLASS A—CATTLE.

LOT 1—SHORTHORN.

Name.	*Residence.*	*State.*
Charles Dallenbach	Champaign	Illinois
Henry A. Heinaman	Belleville	Illinois
Thomas Irwin	Bloomington	Illinois

LOT 2—HEREFORD.

Henry A. Heinaman	Belleville	Illinois
Thomas Irwin	Bloomington	Illinois
Charles Dallenbach	Champaign	Illinois

LOT 3—DEVON.

Thomas Irwin	Bloomington	Illinois
Charles Dallenbach	Champaign	Illinois
Henry A. Heinaman	Belleville	Illinois

LOT 4—OTHER PURE BEEF BREEDS.

No entries

LOT 5—GRADES OR CROSSES.

Henry A. Heinaman	Belleville	Illinois
Charles Dallenbach	Champaign	Illinois
James Peltz	Polo	Illinois

LOT 6—SWEEPSTAKES.

F. A. Gertizer	Springfield	Illinois
Thomas Irwin	Bloomington	Illinois
J. F. Briggs	Downer's Grove	Illinois
J. H. Bunn	Peoria	Illinois
H. Lichtenberger	Freeport	Illinois

LOT 7—GRAND SWEEPSTAKES.

F. A. Gertizer	Springfield	Illinois
Thomas Irwin	Bloomington	Illinois
J. H. Bunn	Peoria	Illinois
James Peltz	Polo	Illinois
Henry A. Heinaman	Belleville	Illinois

LOT 8—CAR LOADS.

Thomas Irwin	Bloomington	Illinois
J. F. Briggs	Downer's Grove	Illinois
J. H. Bunn	Peoria	Illinois

LOT 9—DRESSED BULLOCKS.

Edward Lees	Chicago	Illinois
Henry A. Heinaman	Belleville	Illinois
James Peltz	Polo	Illinois

LOT 10—DRESSED BULLOCKS—SWEEPSTAKES.

Henry A. Heinaman	Belleville	Illinois
James Peltz	Polo	Illinois
Edward Lees	Chicago	Illinois

CLASS C—SHEEP.

LOT 14—LONG WOOLS.

James Peltz	Polo	Illinois
J. H. Bunn	Peoria	Illinois
F. A. Gertizer	Springfield	Illinois

LOT 15—MIDDLE WOOLS.

J. H. Bunn	Peoria	Illinois
F. A. Gertizer	Springfield	Illinois
James Peltz	Polo	Illinois

LOT 16—FINE WOOLS.

No entries.

LOT 17—GRADES OR CROSSES.

F. A. Gertizer	Springfield	Illinois
J. H. Bunn	Peoria	Illinois
James Peltz	Polo	Illinois

LOT 18—SWEEPSTAKES.

J. F. Briggs	Downer's Grove	Illinois
H. Lichtenberger	Freeport	Illinois
Thomas Irwin	Bloomington	Illinois

LOT 19—GRAND SWEEPSTAKES.

James Peltz	Polo	Illinois
Henry A. Heinaman	Belleville	Illinois
H. Lichtenberger	Freeport	Illinois

LOT 21—CAR-LOADS.

J. H. Bunn	Peoria	Illinois
F. A. Gertizer	Springfield	Illinois
James Peltz	Polo	Illinois

LOT 22—DRESSED SHEEP.

No entries.

CLASS D—SWINE.

LOT 23—BERKSHIRE.

J. F. Briggs	Downer's Grove	Illinois
F. A. Gertizer	Springfield	Illinois
H. Lichtenberger	Freeport	Illinois

LOT 24—POLAND CHINA.

F. A. Gertizer	Springfield	Illinois
J. F. Briggs	Downer's Grove	Illinois
H. Lichtenberger	Freeport	Illinois

LOT 25—CHESTER WHITE.

J. F. Briggs	Downer's Grove	Illinois
F. A. Gertizer	Springfield	Illinois
H. Lichtenberger	Freeport	Illinois

LOT 26—ESSEX.

F. A. Gertizer	Springfield	Illinois
J. F. Briggs	Downer's Grove	Illinois
H. Lichtenberger	Freeport	Illinois

LOT 27—GRADES OR CROSSES.

J. F. Briggs	Downer's Grove	Illinois
F. A. Gertizer	Springfield	Illinois
H. Lichtenberger	Freeport	Illinois

LOT 28—SWEEPSTAKES.

James Peltz	Polo	Illinois
Henry A. Heinaman	Belleville	Illinois

LOT 29—GRAND SWEEPSTAKES.

Thomas Irwin	Bloomington	Illinois
Edward Lees	Chicago	Illinois

LOT 31—CAR-LOADS.

No entries.

CLASS E—POULTRY.

Alfred Doyle	Chicago	Illinois
Robert Mitchell	Princeton	Indiana
J. B. Foot	Norwood Park	Illinois

COMMITTEE ON MEASUREMENTS.

William Potts	Jacksonville	Illinois
T. W. Hunt	Ashton	Illinois
Amos F. Moore	Polo	Illinois

BREEDING OF ANIMALS EXHIBITED.

CLASS A—CATTLE.

W. M. SMITH, *Superintendent.*

LOT 1—SHORTHORNS—THOROUGHBRED.

Steer 3 and under 4 years old—3 entries.

1—Abe Renic, exhibited by John B. Sherman, Chicago; bred by Wm. Sandusky, Catlin. Dropped February 10, 1878. Sire, Baron Booth, 34430; dam, Molly, 13. Vol. 19.

2—Boynton, exhibited by John B. Sherman, Chicago; bred by J. N. Brown's Sons, Berlin. Dropped December 13, 1877. Sire, Summit Airdrie, 12997; dam, Cyatha. Vol 15.

3—Morris, exhibited by John B. Sherman, Chicago; bred by J. N. Brown's Sons, Berlin. Dropped April 4, 1878. Sire, Summit Airdrie, 12997; dam, Lady of Leroy. Vol. 9.

Steers 2 and under 3 years—7 entries.

4—Airdrie Boy, bred and exhibited by Dunlap Bros., Abingdon. Dropped December 14, 1878. Sire, Poppy's Duke of Airdrie, 27470; dam, Roan Duchess Sutherland. Vol. 16.

5—Mary Boy, bred and exhibited by Dunlap Bros., Abingdon. Dropped July 27, 1879. Sire, Poppy's Duke of Airdrie, 27470; dam, Airdrie Duchess II. Vol 16.

6—Corporal, exhibited by John B. Sherman, Chicago; bred by John S. Highmore, Rochester. Dropped November 21, 1878 Sire, Canada Prince, 3241; dam, Crocus. Vol. 6.

7—Perfect, exhibited by John B. Sherman, Chicago; bred by J C. Ramsey, Onarga. Dropped April 20, 1879. Sire, Cherub Louanjo, 16472; dam, Kate Murdock. Vol. 15.

8—Muir, exhibited by Morrow & Muir, Clintonville, Ky.; bred by J. V. Muir, Clintonville, Ky. Dropped November 14, 1878. Sire, Johnston, 646; dam, Garcia, by Master Butterfly, 3974.

9—Belton, bred and exhibited by H. C. Nelson, Canton. Dropped May 11, 1879. Sire, Airdrie Duke of Hemdoka, 16120; dam, Lenore. Vol. 10.

10—Quid Esset, bred and exhibited by H. C Nelson, Canton Dropped January 25, 1879. Sire, Airdrie Duke of Hemdoka, 16120; dam, Molly Veach. Vol. 12.

Cow 3 years old or over—4 entries.

11—Lady Aberdeen 3d, exhibited by Canada West Farm Stock Association, Brantford, Ont., Can.; bred by John S. Armstrong, Guelph, Ont., Can. Dropped September 17, 1876. Sire, Young Heir, 3326 (31351); dam, Lady Aberdeen 2d.

12—Geneva's Pride, bred and exhibited by J. H. Potts & Son, Jacksonville. Dropped March 15, 1875. Sire, Master Geneva, 20368; dam, Pride of Oxford.

13—Miss Molly Bates 4th, bred and exhibited by Nelson Jones, Towanda. Dropped December 27, 1875. Sire, Baron Bates 4th, 13406; dam, Mollie. Vol. 7.

14—Airdrienne 4th, bred and exhibited by H. C. Nelson, Canton. Dropped June 1, 1876. Sire, Bob McGroty, 9542; dam, Lenore. Vol. 10.

LOT 2—HEREFORDS—THOROUGHBRED.

Steer, 3 and under 4 years—2 entries.

15—Will, exhibited by T. L. Miller Co., Beecher; bred by T. L. Miller, Beecher. Dropped June 28, 1878. Sire, Success, 5031; dam, Mollie.

16—Washington, exhibited by T. L. Miller Co., Beecher; bred by T. L. Miller, Beecher. Dropped June 10, 1878. Sire, Success, 5031; dam, Miss Smith.

Cow, 3 years old or over—3 entries.

17—Maid of the Mist, 1365, exhibited by T. E. Miller, Beecher; bred by H. C. Burleigh, Fairfield Center, Maine. Dropped September 12, 1875. Sire, Orphan Boy, 1356; dam, Necklace 8th, 1362.

18—Lady Elliott, 2150, exhibited by T. E Miller, Beecher; bred by T. L. Miller, Beecher. Dropped March 18, 1878. Sire, Seventy-Six, 1093; dam, Fair Lady, 1131.

19—May Queen 2d, exhibited by Thos. Clark, Beecher; bred by Her Majesty, Queen of England. Sire, Alexander, 3653; dam, May Queen.

LOT 3—DEVONS—THOROUGHBRED.

Steer, 3 and under 4 years—2 entries.

20—Buck, bred and exhibited by L. Rawson, Oak Creek, Wis. Dropped March 16, 1878. Sire, Rochelle, 1043; dam, Deer 2d, 1548.

21—Broad, bred and exhibited by L. Rawson, Oak Creek, Wis. Dropped May 15, 1878. Sire, Sir John, 1065; dam, Bessie, 825.

Steer, 2 and under 3 years—3 entries.

22—Tom, bred and exhibited by L. Rawson, Oak Creek, Wis. Dropped June 5, 1879. Sire, Sir John, 1065; dam, Roxy Ann, 206

23—Jerry, bred and exhibited by L. Rawson, Oak Creek, Wis. Dropped March 10, 1879. Sire, Rochelle, 1043; dam, Mary, 1894.

24—John, bred and exhibited by L. Rawson, Oak Creek, Wis. Dropped April 20, 1879. Sire, Sir John, 1065; dam, Bessie, 825.

Steer, 1 and under 2 years—3 entries.

25—Bill, bred and exhibited by L. Rawson, Oak Creek, Wis. Dropped February 29, 1880. Sire, Sir John, 1065; dam, Estelline, 935

26—Jim, bred and exhibited by L. Rawson, Oak Creek, Wis Dropped February 29, 1880. Sire, Rochelle, 1043, dam, May, 1901.

27—Max, bred and exhibited by L. Rawson, Oak Creek, Wis. Dropped March 14, 1880. Sire, Rochelle, 1043; dam, Deer 2d, 1548.

LOT 4—OTHER PURE BEEF BREEDS—NOT NAMED.

No entry.

LOT 5—GRADES OR CROSSES.

Steer, 3 and under 4 years—34 entries.

28—McCue, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped March 15, 1878. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

29—Pell, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped May 15, 1878. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

30—Read, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped May 15, 1878. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

31—McMullen, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped June 15, 1878. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

32—Blood, grade Shorthorn, bred and exhibited by J D Gillett Elkhart. Dropped June 15, 1878. Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow.

33—Blackstone, grade Shorthorn, bred and exhibited by J D Gillett, Elkhart Dropped February 15, 1878. Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow

34—Barney, grade Shorthorn, bred and exhibited by J D Gillett Elkhart Dropped May 15, 1878. Sire, Shorthornbull, dam, ¾ grade Shorthorn cow

35—Phil. Sheridan grade Shorthorn, bred and exhibited by J D. Gillett Elkhart Dropped August 15, 1878. Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow

36—Broadhorns, grade Hereford exhibited by C M Culbertson, Chicago, bred by Wm. Richardson, Wauseon O. Sire, Hereford bull, dam, ½ grade Hereford cow

37—Red Chub, grade Shorthorn, exhibited by T W Hunt Ashton, bred by Millican Hunt, Ashton. Dropped April 23, 1878 Sire, Laudable, 17493, dam ¾ grade Shorthorn cow

38—Pickrell, grade Shorthorn, exhibited by T W Hunt, Ashton bred by Millican Hunt, Ashton. Dropped February 10, 1878 Sire Laudable, 17493, dam, ½ grade Shorthorn cow.

39—Sam Noe, grade Shorthorn, exhibited by T W Hunt Ashton, bred by Millican Hunt Ashton. Dropped April 26, 1878 Sire, Laudable 17493, dam, ¾ grade Shorthorn cow.

40—Increase, grade Shorthorn, exhibited by T W Hunt, Ashton bred by William Hunt, Ashton Dropped July 5, 1878. Sire, Minnie's Duke, dam, ¾ grade Shorthorn cow

41—Beveridge, grade Shorthorn, exhibited by John B Sherman, Chicago, bred by H. Pyle, Chicago. Dropped April 15, 1878 Sire, Shorthorn bull, dam, ½ grade Shorthorn cow

42—Tom Brown grade Hereford, exhibited by T L Miller Co , Beecher, bred by T L. Miller, Beecher Dropped September 15, 1878 Sire, Seventy-Six, 1093, dam, ½ grade Hereford cow.

43—Conqueror, grade Hereford, exhibited by T L Miller Co , Beecher, bred by T L. Miller, Beecher Dropped August 1, 1878 Sire, Success, 5031, dam, ¾ grade Hereford cow

44—Oxford grade Hereford exhibited by T L Miller Co Beecher, bred by T L Miller, Beecher Dropped September 25, 1878 Sire Success 5031, dam ½ grade Hereford cow.

45—Bachelor, grade Hereford exhibited by T L Miller Co , Beecher, bred by T L Miller, Beecher. Dropped August 1, 1878 Sire Success, 5031, dam Native Cow

46—Hawks, grade Shorthorn exhibited by A F Moore Polo bred by Hawks & Moore, Polo. Dropped April 15, 1878 Sire, Shorthorn bull, dam, ½ grade Shorthorn cow

47—Cunningham, grade Shorthorn, exhibited by Morrow & Muir, Clintonville, Ky bred by Lewis Cunningham Clintonville, Ky Dropped April 29, 1878 Sire Red Airdrie, 4211, dam, ⅞ grade Shorthorn cow

48—Talbott, grade Shorthorn exhibited by Morrow & Muir, Clintonville, Ky , bred by Lunceford Talbott North Middleton Ky Dropped March 20 1878 Sire Stately Lad, dam ¼ grade Shorthorn cow.

49—Frosty grade Shorthorn exhibited by Morrow & Muir Clintonville Ky , bred by Geo W Morrow, Clintonville, Ky Dropped October 25, 1878 Sire, Allie Climax, dam, ⅞ grade Shorthorn cow

50—Dick grade Shorthorn exhibited by Morrow & Muir Clintonville, Ky bred by J H. Weathers, Clintonville, Ky Dropped March 25 1878 Sire Shorthorn bull, dam, ¾ grade Shorthorn cow

51—Tom grade Shorthorn exhibited by Morrow & Muir Clintonville Ky bred by J H Weathers, Clintonville, Ky Dropped May 1, 1878 Sire Shorthorn bull, dam ¾ grade Shorthorn cow

52—Lunce grade Shorthorn exhibited by Morrow & Muir Clintonville Ky bred by Lunceford Talbott North Middleton, Ky Dropped April 15, 1878 Sire Stately Lad, dam ¾ grade Shorthorn cow

53—Sampson, grade Shorthorn exhibited by Morrow & Muir Clintonville, Ky , bred by Lunceford Talbott North Middleton, Ky Dropped April 10, 1878 Sire, Stately Lad, dam, ¾ grade Shorthorn cow

54—Clay, grade Shorthorn exhibited by Morrow & Muir Clintonville Ky , bred by John C Clay, Paris, Ky Dropped May 1, 1878 Sire, Shorthorn bull, dam, ⅞ grade Shorthorn cow.

55—Bush, grade Shorthorn exhibited by Morrow & Muir, Clintonville, Ky , bred by R D Hunter, Winchester, Ky. Dropped June 1, 1878 Sire, Shorthorn bull, dam, ⅞ grade Shorthorn cow.

56—Lem, grade Shorthorn, exhibited by Morrow & Muir, Clintonville, Ky.; bred by Lunceford Talbott, North Middleton, Ky. Dropped April 20, 1878. Sire, Stately Lad; dam, ¾ grade Shorthorn cow.

57—Cloud, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped March 15, 1878. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

58—Short Sir, grade Shorthorn, bred and exhibited by H. C. Nelson, Canton. Dropped September 4, 1878. Sire, Airdrie Duke of Hemdoka, 16120; dam, 31-32 grade Shorthorn cow.

59—Quid-Si-Nam, grade Shorthorn, bred and exhibited by H. C. Nelson, Canton. Dropped June 15, 1878. Sire, Airdrie Duke of Hemdoka, 16120; dam, 31-32 grade Shorthorn cow.

60—Quid, grade Shorthorn, bred and exhibited by H. C. Nelson, Canton. Dropped June 18, 1878. Sire, Airdrie Duke of Hemdoka, 16120; dam, 31-32 grade Shorthorn cow.

61—Downhorn, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped May 15, 1878. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

Steer, 2 and under 3 years—33 entries.

62—John Sherman, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped June 15, 1879. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

63—Cherry, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped March 15, 1879. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

64—Oakley, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped March 15, 1879 Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

65—Clincher, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped February 15, 1879. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

66—Chance, grade Shorthorn, bred and exhibited by J D. Gillett, Elkhart. Dropped September 15, 1879. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

67—Cash, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart Dropped February 15, 1879. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

68—Garfield, grade Shorthorn, bred and exhibited by J D Gillett, Elkhart. Dropped May 15, 1879. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

69—Arthur, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped May 15, 1879. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

70—Storm, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped May 15, 1879. Sire, Shorthorn bull; dam, ¾ grade Shorthorn cow.

71—Chub, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped August 15, 1879. Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow.

72—Wild Bill, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped June 15, 1879. Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow.

73—Right, grade Hereford, exhibited by C. M. Culbertson, Chicago; bred by Clark Hard, Rockford. Dropped December 13, 1878. Sire, Hereford bull; dam, Native cow.

74—Left, grade Hereford, exhibited by C. M. Culbertson, Chicago; bred by Clark Hard, Rockford. Dropped December 13, 1878. Sire, Hereford bull; dam, Native cow.

75—Spot Face, grade Hereford, exhibited by C M. Culbertson, Chicago; bred by H. S. Kline, Wauseon, O. Dropped December 30, 1878. Sire, Hereford bull; dam, Native cow.

76—Royal Charmer, grade Shorthorn, bred and exhibited by T. W. Hunt, Ashton. Dropped December 3, 1878. Sire, Laudable, 17493; dam, 15-16 dam Shornhorn cow.

77—Red Lord, grade Shorthorn, exhibited by T. W Hunt, Ashton; bred by M. Hunt, Ashton. Dropped December 24, 1878. Sire, Minnie's Duke; dam, ⅞ grade Shorthorn cow.

78—Thad. Stevens, grade Shorthorn, exhibited by T. W. Hunt, Ashton; bred by M. Hunt, Ashton. Dropped April 28, 1879. Sire, Laudable, 17493, dam, ¾ grade Shorthorn cow.

79—Baron, grade Shorthorn, exhibited by T. W. Hunt, Ashton; bred by Wm. Hunt, Ashton. Dropped June 15, 1879. Sire, Dominion; dam, ¾ grade Shorthorn cow.

80—Sensation, grade Shorthorn, exhibited by T. W. Hunt, Ashton, bred by G. W. Myers, Ashton. Dropped January 10, 1879. Sire, Dominion; dam, ¾ grade Shorthorn cow.

81—John Bull, grade Shorthorn, bred and exhibited by David Grant, Petersburg. Dropped December 17, 1878. Sire, Arrow (Shorthorn); dam, Native cow.

82—Echerd, grade Shorthorn, exhibited by David Grant, Petersburg; bred by Geo. B. Welch, Tallula. Dropped June 7, 1879. Sire, 15-16 grade Shorthorn bull; dam, Shorthorn cow.

83—Col. Mills, grade Shorthorn, bred and exhibted by D. W. Smith, Bates. Dropped April 1, 1879. Sire, Ella's Duke, 26518; dam, ⅞ grade Shorthorn cow.

84—Cherub, grade Shorthorn, exhibited by John B. Sherman, Chicago; bred by J. C. Ramsey, Onarga. Dropped April 22, 1879. Sire, Cherub Lonango, 16472; dam, ¾ grade Shorthorn cow.

85—Kansas, grade Hereford, exhibited by T. L. Miller Co., Beecher; bred by ——, Kansas. Dropped December 15, 1878. Sire, Hereford bull; dam, Common cow.

86—Ab. Platt, grade Shorthorn, bred and exhibited by G. S. Burleigh, Mechanicsville, Ia. Dropped December 4, 1878. Sire, Royal Oak, 2802; dam, Shorthorn cow.

87—Quid Sit, grade Shorthorn, bred and exhibited by H. C. Nelson, Canton. Dropped March 15, 1879. Sire, Airdrie Duke of Hemdoka, 16120; dam, 31-32 grade Shorthorn cow.

88—Si Quid, grade Shorthorn, bred and exhibited by H. C. Nelson, Canton. Dropped May 28, 1879. Sire, Airdrie Duke of Hemdoka, 16120; dam, 31-32 grade Shorthorn cow.

89—Quid Nunc, grade Shorthorn, bred and exhibited by H. C. Nelson, Canton. Dropped March 25, 1879. Sire, Airdrie Duke of Hemdoka, 16120; dam, 31-32 grade Shorthorn cow.

90—Quid Nam, grade Shorthorn, bred and exhibited by H. C. Nelson, Canton. Dropped December 25, 1878. Sire, Airdrie Duke of Hemdoka, 16120; dam 15-16 grade Shorthorn cow.

91—Nam Si, grade Shorthorn, bred and exhibited by H. C. Nelson, Canton. Dropped May 19, 1879. Sire, Airdrie Duke of Hemdoka, 16120; dam, 15-16 grade Shorthorn cow.

92—Si Nam, grade Shorthorn, bred and exhibited by H. C. Nelson, Canton. Dropped May 19, 1879. Sire, Airdrie Duke of Hemdoka, 16120; dam, 15-16 grade Shorthorn cow.

93—Nam Quid, grade Shorthorn, bred and exhibited by H. C. Nelson, Canton. Dropped January 6, 1879. Sire, Airdrie Duke of Hemdoka, 16120; dam, 15-16 grade Shorthorn cow.

94—Slow-Go, grade Shorthorn, bred and exhibited by H. C. Nelson, Canton. Dropped May 18, 1879. Sire, Airdrie Duke of Hemdoka, 16120; dam, 31-32 grade Shorthorn cow.

Steer 1 and under 2 years—5 entries.

95—Curly, grade Hereford, exhibited by C. M Culbertson, Chicago; bred by H. S. Kline, Wauseon, Ohio. Dropped December 19, 1879. Sire, ¾ grade Hereford bull, dam, ½ grade Hereford cow.

96—Geo. Washington, grade Shorthorn, bred and exhibited by T. W Hunt, Ashton. Dropped February 22, 1880. Sire, Lester Hall, Vol. 17; dam, 15-16 grade Shorthorn cow.

97—Major, grade Shorthorn, bred and exhibited by J. H Potts, Jacksonville. Dropped November 15, 1879. Sire, Major Richmond, 30253; dam, ¾ grade Shorthorn cow.

98—Red Acomb, grade Shorthorn, bred and exhibited by Cobb & Phillips, Kankakee. Dropped December 25, 1879. Sire, Acomb's Duke, 25486; dam, low grade cow.

99—Bailey, grade Shorthorn, bred and exhibited by G. S. Burleigh, Mechanicsville, Ia. Dropped February 20, 1880. Sire, Iowa Chief 2d, 1885; dam, Common cow.

Cow, 3 years old or over—2 entries.

100—Lady Peerless, grade Shorthorn, bred and exhibited by J D Gillett, Elkhart. Dropped May 15, 1878. Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow.

101—Beefy Back, grade Hereford, exhibited by C. M. Culbertson, Chicago; bred by J. B. Gray, Lisbon, Iowa. Dropped March 15, 1876. Sire, Hereford bull, dam, Native cow.

LOT 7—GRAND SWEEPSTAKES.

Best Steer or Cow in the Show—30 entries.

102—Eddy Morris, Shorthorn, exhibited by John B. Sherman, Chicago; bred by H. E. Nelson, Canton. Dropped April 8, 1876. Sire, The Cardinal, 18430; dam, Vanassa.

103—Florid Duke, Shorthorn, bred and exhibited by John Shering, Florid. Dropped August 12, 1877. Sire Cypress Lad, 13746; dam, Red Alice, Vol. 10.

104—Star, grade Hereford, exhibited by G. S. Burleigh, Mechanicsville, Ia.; bred by Watson Jones, Fairfield Center, Maine. Dropped March 15, 1877. Sire, Hereford bull; dam, Common cow.

105—Bell, Shorthorn exhibited by Morrow & Muir, Clintonville, Ky.; bred by S. S. Bell, Clintonville, Ky. Dropped September 15, 1877. Sire, Abe Johnston, 646; dam, Anna Moss, Vol. 3.

106—Conover, grade Shorthorn, bred and exhibited by James Gaines & Son, Ridge Farm. Dropped March 15, 1876. Sire, Master Airdrie, 10458; dam, ¾ grade Shorthorn cow.

LOT 8—CAR LOADS

Car Load of 8 *Cattle* 3 *and under* 4 *years old*—4 *entries.*

107—Snow grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped May 15, 1878. Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow.

108—Milk, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped March 15, 1878. Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow.

109—White Lad, grade Shorthorn, bred and exhibited by J. D. Gillett, Elkhart. Dropped March 15, 1878. Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow

110—Norway grade Shorthorn, bred and exhibited by J D Gillett, Elkhart. Dropped March 15, 1878 Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow

111—White Feather, grade Shorthorn bred and exhibited by J. D Gillett, Elkhart. Dropped May 15, 1878 Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow.

112—Arctic grade Shorthorn bred and exhibited by J. D Gillett, Elkhart. Dropped May 15, 1878 Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow.

113—White Cream, grade Shorthorn bred and exhibited by J. D Gillett, Elkhart. Dropped June 15, 1878. Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow.

114—Downy, grade Shorthorn bred and exhibited by J D Gillett, Elkhart. Dropped June 15, 1878. Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow

115—Belmont Shorthorn, exhibited by John B Sherman, Chicago, bred by J N. Brown's Sons Berlin. Dropped May 17, 1878 Sire, Sir Knightly Wiley, 26989, dam, Blossom, Vol 12

116—Jim Blaine grade Shorthorn exhibited by John B. Sherman Chicago, bred by J. C. Ramsey Onarga Dropped June 15, 1878 Sire, Shorthorn bull; dam, ½ grade Shorthorn cow.

117—Frank, grade Shorthorn, exhibited by John B Sherman, Chicago, bred by W. F Chandler, Bedford, Ia Dropped April 15, 1878. Sire, Shorthorn bull, dam, ½ grade Shorthorn cow

118—Robin Hood, Shorthorn, exhibited by John B. Sherman, Chicago, bred by J. S Highmore, Rochester Dropped September 29, 1878 Sire, Canada Prince, 3241, dam, Roxana 5th, Vol 5.

LOT 11—HEAVIEST FAT STEER—8 entries

119—Gen Grant, grade Shorthorn bred and exhibited by J G Gillett Elkhart Dropped March 15, 1877 Sire, Shorthorn bull, dam, ¾ grade Shorthorn cow

120—Nels Morris, grade Shorthorn, exhibited by John B Sherman Chicago, bred by Abram Mann, Vermilion Co Dropped April 15, 1878 Sire, Shorthorn bull, dam, ⅞ grade Shorthorn cow

121—Tim, grade Shorthorn, exhibited by John B Sherman, Chicago, bred by — Griffith, Boone Co Dropped April 15, 1875. Sire, Shorthorn bull, dam, ½ grade Shorthorn cow

122—Freeport, grade Shorthorn, bred and exhibited by I S. Zartman, Freeport Dropped May 15, 1877. Sire, Shorthorn bull, dam, ⅞ grade Shorthorn cow.

123—Stephenson, grade Shorthorn, bred and exhibited by I S. Zartman, Freeport. Dropped June 10, 1877 Sire, Shorthorn bull, dam ⅞ grade Shorthorn cow.

124—Foote, grade Shorthorn, exhibited by John B Sherman, Chicago, bred by J D. Gillett, Elkhart. Dropped May 15, 1876 Sire, Shorthorn bull, dam, ¾ grade Shorthorn

125—Vermilion, Shorthorn exhibited by John B Sherman, Chicago, bred by Wm. Sandusky, Catlin. Dropped February 13, 1874. Sire, Baron Booth, 34430, dam, Molly 3d, Vol. 10.

CLASS B—HORSES.

DAVID E. BEATY, *Superintendent.*

LOT 13—HORSES ON EXHIBITION.

126—Vetoe, roadster, exhibited by Lewis Adams, Chicago, bred by A. H. Taylor, Cherry Valley, N. Y. Foaled October, 1876. Sire, Florida; dam, Lady May.

127—Grand Union, trotter, exhibited by A. H. Taylor, Chicago; bred by A. H. Taylor, Central Valley, N. Y. Foaled June, 1876. Sire, Florida; dam, Lady Cartland.

128—Montgomery, trotter, bred and exhibited by A. H. Taylor, Chicago. Foaled April 15, 1873. Sire, Florida; dam, Lady Laurance.

129—Florida, trotter, bred and exhibited by A. H. Taylor, Chicago. Foaled May, 1867. Sire, Rysdyks Hambletonian; dam, Florida Maid.

130—Young Conqueror, Norman, exhibited by David McKay, Chicago. Foaled October, 1875. Sire, Conqueror.

131—Maria, English draft, exhibited by David McKay, Chicago. Foaled May, 1877. Sire, Lincolnshire Lad.

132—Lochiel, Clydesdale, exhibited by David McKay, Chicago. Foaled May, 1878. Sire, Prince Albert, (616).

133—Young Wallace, Clydesdale, exhibited by David McKay, Chicago. Foaled June, 1874. Sire, Young Champion, (838).

134—Sir William Wallace, Clydesdale, exhibited by David McKay, Chicago. Foaled July, 1875. Sire, Samson, (1524).

135—Grevey, Norman, exhibited by Crumpacker, Winters & Co., Westville, Ind. Foaled April, 1877. Imported from Normandy, France, September, 1881.

136—What-You-Want, Norman, exhibited by Crumpacker, Winters & Co., Westville, Ind. Foaled May, 1878. Imported from Normandy, France, September, 1881.

137—Vidocq, Norman, exhibited by Crumpacker, Winters & Co., Westville, Ind. Foaled April, 1879. Imported from Normandy, France, September, 1881.

138—Algerian, Norman, exhibited by Crumpacker, Winters & Co., Chicago. Foaled June, 1879. Imported from Normandy, France, September, 1881.

CLASS C—SHEEP.

E. B. DAVID, *Superintendent.*

LOT 14—LONG WOOLS.

Wether 2 and under 3 years—5 entries.

139—Dick, Cotswold, bred and exhibited by J. A. Brown & Son, Decatur. Dropped March 1, 1879. Sire, 2d Grey Prince; dam, Bet.

140—Curly, Cotswold, bred and exhibited by J. A. Brown & Son, Decatur. Dropped March 1, 1879. Sire, 2d Grey Prince; dam, Topsy.

141—Tom, Cotswold, exhibited by M. N. Hood, Guelph, Can; bred by Peter Arkell, Teeswater, Can. Dropped April 15, 1879. Sire, Cotswold ram; dam, Cotswold ewe.

142—Dick, Cotswold, exhibited by M. N. Hood, Guelph, Can; bred by Evan McDonald, Guelph, Can. Dropped April 15, 1879. Sire, Cotswold ram; dam, Cotswold ewe.

143—Harry, Cotswold, exhibited by M. N. Hood, Guelph, Can.; bred by Geo. Hood, Guelph, Can. Dropped April 15, 1879. Sire, Cotswold ram; dam, Cotswold ewe.

Wether, 1 and under 2 years—3 entries.

144—Billy, Cotswold, bred and exhibited by J. A. Brown & Son, Decatur. Dropped March 1, 1880. Sire, 2d Grey Prince; dam, Queen.

145—Tommy, Cotswold, bred and exhibited by J. A. Brown & Son, Decatur. Dropped March 1, 1880. Sire, 2d Gray Prince; dam, Victor.

146—Sandy, Cotswold, exhibited by M. N. Hood, Guelph, Can.; bred by Ontario School of Agriculture, Guelph, Can. Dropped April 15, 1880. Sire, Cotswold ram; dam, Cotswold ewe.

Ewe, 2 and under 3 years—1 entry.

147—Daisy, Cotswold, exhibited by J. A. Brown & Son, Decatur; bred by Peter Everall, Shrewsbury, England. Dropped March 1, 1879. Sire, Cardinal 2d; dam, Lou of Foreman.

Ewe, 1 and under 2 years—7 entries.

148—Wonder, Cotswold, bred and exhibited by Morgan & Cotton, Camargo. Dropped March 29, 1880. Sire, Cotswold ram, dam, Cotswold ewe.

149—Perfection, Cotswold, exhibited by Morgan & Cotton, Camargo; bred by J. Ward, Herefordshire, England. Dropped March 31, 1880. Sire, Cotswold ram; dam, Cotswold ewe.

150—Maud S., Cotswold, exhibited by Frank Willson, Jackson, Mich.; bred by Edward Tombs, Brampton, England. Dropped March 1, 1880. Sire, Cotswold ram; dam, Cotswold ewe.

151—Lovely, Cotswold, exhibited by Morgan & Cotton, Camargo; bred by J Ward, Herefordshire, England. Dropped March 15, 1880. Sire, Cotswold ram; dam, Cotswold

152—No. 475, Cotswold, exhibited by Abner Strawn, Ottawa; bred by S. & T. Gillett, Kilkenny, England. Dropped March 15, 1880. Sire, Cotswold ram; dam, Cotswold ewe.

153—No. 476, Cotswold, exhibited by Abner Strawn, Ottawa, bred by S. &. T. Gillett, Kilkenny, England. Dropped March 16, 1880. Sire, Cotswold ram, dam, Cotswold ewe.

154—No. 478, Cotswold, exhibited by Abner Strawn, Ottawa; bred by S. & T Gillett, Kilkenny, England. Dropped March 17, 1880. Sire, Cotswold ram; dam, Cotswold ewe.

Ewe, under 1 year—5 entries.

155—Willson I, Cotswold, bred and exhibited by Frank Willson, Jackson, Mich. Dropped March 1, 1881. Sire, Cotswold ram; dam, Cotswold ewe.

156—Willson II, Cotswold, bred and exhibited by Frank Willson, Jackson, Mich. Dropped April 1, 1881. Sire, Cotswold ram; dam, Cotswold ewe

157—No. 465, Cotswold, exhibited by Abner Strawn, Ottawa; bred by Henry Akers, Black Burton, England. Dropped March 18, 1881. Sire, Cotswold ram; dam, Cotswold ewe.

158—No. 466, Cotswold, exhibited by Abner Strawn, Ottawa, bred by Henry Akers, Black Burton, England. Dropped March 19, 1881. Sire, Cotswold ram; dam, Cotswold ewe.

159—No. 467, Cotswold, exhibited by Abner Strawn, Ottawa; bred by E. Tombs, Black Burton, England. Dropped March 20, 1881. Sire, Cotswold ram; dam, Cotswold

LOT 15—MIDDLE WOOLS.

Wether, 2 and under 3 years—7 entries.

160—Bally, Southdown, bred and exhibited by J. H. Potts & Son, Jacksonville. Dropped March 15, 1879. Sire, Southdown ram; dam, Southdown ewe.

161—Jack, Southdown, bred and exhibited by J. H. Potts & Son, Jacksonville. Dropped March 15, 1879. Sire, Southdown ram; dam, Southdown ewe.

162—Charley, Southdown, bred and exhibited by J. H. Potts & Son, Jacksonville. Dropped March 15, 1879. Sire, Southdown ram; dam, Southdown ewe.

163—Swift, Southdown, exhibited by J. V. Muir, Clintonville, Ky.; bred by Chas. Swift, Winchester, Ky. Dropped February 1, 1879. Sire, Southdown ram; dam, Southdown ewe.

164—Ford, Southdown, exhibited by J. V. Muir, Clintonville, Ky.; bred by Chas. Swift, Winchester, Ky. Dropped February 1, 1879. Sire, Southdown ram; dam, Southdown ewe.

165—Model, Shropshire, bred and exhibited by Morgan & Cotton, Camargo. Dropped March 30, 1879. Sire, Imp. Shropshire ram; dam, Shropshire ewe.

166—Major, Shropshire, bred and exhibited by Morgan & Cotton, Camargo. Dropped April 5, 1879. Sire, Imp. Shropshire ram; dam, Shropshire ewe.

Wether 1 and under 2 years—7 entries.

167—Tom, Southdown, bred and exhibited by J. H. Potts & Son, Jacksonville. Dropped April 1, 1880. Sire, Southdown ram; dam, Southdown ewe.

168—Dick, Southdown, bred and exhibited by J. H Potts & Son, Jacksonville. Dropped April 1, 1880. Sire, Southdown ram; dam, Southdown ewe.

169—Harry, Southdown, bred and exhibited by J. H. Potts & Son, Jacksonville. Dropped March 25, 1880. Sire, southdown ram, dam, Southdown ewe.

170—Monarch, Shropshire, bred and exhibited by Morgan & Cotton, Camargo. Dropped April 3, 1880. Sire, Imp. Shropshire ram; dam, Shropshire ewe.

171—Milton, Shropshire, bred and exhibited by Morgan & Cotton, Camargo. Dropped April 10, 1880. Sire, Imp. Shropshire ram, dam, Shropshire ewe.

172—Duncan, Southdown, exhibited by M. N. Hood, Guelph, Can ; bred by Ontario School of Agriculture, Guelph, Can Dropped April 15, 1880. Sire, Imp. Walsingham ram; dam, Southdown ewe.

173—Donald, Southdown, exhibited by M. N. Hood, Guelph, Can.; bred by Ontario School of Agriculture, Guelph, Can. Dropped April 15, 1880. Sire, Imp. Walsingham ram; dam, Southdown ewe.

Wether under 1 year—2 entries.

174—No. 21, Southdown, bred and exhibited by J. H. Potts & Son, Jacksonville. Dropped April 5, 1881. Sire, Southdown ram, dam, Southdown ewe.

175—No. 28, Southdown, bred and exhibited by J H Potts & Son, Jacksonville. Dropped April 5, 1881. Sire, Southdown ram; dam, Southdown ewe.

Ewe 2 and under 3 years—1 entry.

176—Lady, Shropshire, bred and exhibited by J. A. Brown & Son, Decatur. Dropped March 1, 1879. Sire, Shropshire ram, dam, Shropshire ewe.

LOT 16—FINE WOOLS.

No entry.

LOT 17—GRADES OR CROSSES.

Wether 2 and under 3 years—2 entries.

177—Horace Greeley, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 20, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

178—Arkel, grade Cotswold, exhibited by Frank Willson, Jackson, Mich , bred by —— Arkel, Guelph, Can. Dropped March 1, 1879. Sire, Cotswold ram; dam, grade Merino ewe.

Wether 1 and under 2 years—4 entries.

179—Diamond, grade, Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 12, 1880. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

180—Jim, grade Oxford, exhibited M N. Hood, Guelph, Can.; bred by Geo. Hood, Guelph, Can. Dropped April 15, 1880. Sire, Brassy, Imp.; dam, grade Cotswold and Leicester ewe.

181—Ned, grade Oxford, exhibited by M. N. Hood, Guelph, Can.; bred by Geo. Hood, Guelph, Can. Dropped April 15, 1880. Sire, Brassy, Imp.; dam, grade Cotswold and Leicester ewe.

182—Mack, grade Cotswold, bred and exhibited by Frank Willson, Jackson, Mich. Dropped March 1, 1880. Sire, Cotswold ram; dam, grade Merino ewe.

Wether under 1 *year*—3 *entries.*

183—Parnell, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 13, 1881. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

184—John, grade Southdown, exhibited by M. N. Hood Guelph, Can.; bred by Geo. Hood, Guelph, Can. Dropped April 15, 1881. Sire, Southdown ram; dam, grade Leicester ewe

185—Abe, grade Oxford, exhibited by M. N Hood, Guelph, Can; bred by Geo. Hood, Guelph, Can. Dropped April 15, 1881. Sire, Oxford ram; dam, grade Cotswold and Leicester ewe.

Ewe 2 *and under* 3 *years*—1 *entry.*

186—Vic Woodhull, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 9, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

Ewe 1 *and under* 2 *years*—4 *entries.*

187—Nannie, grade Shropshire, bred and exhibited by John Hudson, Moaweaqua. Dropped March 15, 1880. Sire, Shropshire down ram; dam, ½ Cotswold, ½ Southdown ewe.

188—Peggy, grade Oxford, exhibited by M. N. Hood, Guelph, Can.; bred by Geo. Hood, Guelph, Can. Dropped April 15, 1880. Sire, Oxford ram; dam, grade Cotswold and Leicester ewe.

189—Betty, grade Oxford, exhibited by M. N. Hood, Guelph, Can.; bred by John Prain, Palmerston, Can. Dropped April 15, 1880. Sire, Oxford ram; dam, grade Cotswold and Leicester ewe.

190—Flora, grade Oxford, exhibited by M. N Hood, Guelph, Can.; bred by John Prain, Palmerston, Can. Dropped April 15, 1880. Sire, Oxford ram; dam, grade Cotswold and Leicester ewe.

Ewe under 1 *year*—6 *entries.*

191—Miss Nancy, grade Shropshire bred and exhibited by John Hudson, Moawequa. Dropped March 16, 1881. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

192—Lillie, grade Oxford, exhibited by M N. Hood, Guelph, Can ; bred by John Prain, Palmerston, Can Dropped April 15, 1881. Sire, Oxford ram; dam, grade Cotswold and Leicester ewe.

193—Daisy, grade Oxford, exhibited by M. N. Hood, Guelph, Can.; bred by Geo. Hood, Guelph, Can. Dropped April 15, 1881. Sire, Oxford ram; dam, grade Cotswold and Leicester ewe.

194—Rosy, grade Oxford, exhibited by M N. Hood, Guelph, Can.; bred by Geo. Hood, Guelph, Can. Dropped April 15, 1881. Sire, Oxford ram; dam, grade Cotswold and Leicester ewe.

195—Jennie, grade Cotswold bred and exhibited by Frank Willson, Jackson, Mich. Dropped April 15, 1881. Sire, Cotswold ram; dam, grade Merino ewe.

196—Eugenia, grade Merino exhibited by M N. Hood, Guelph, Can.; bred by Geo. Hood, Guelph, Can. Dropped April 15, 1881. Sire, Imp. French Merino ram; dam, Southdown ewe.

LOT 19—GRAND SWEEPSTAKES.

Best Wether or Ewe in the Show—14 *entries.*

197—No. 10, Southdown, bred and exhibited by J. H. Potts & Son, Jacksonville. Dropped March 25, 1877. Sire, Southdown ram; dam, Southdown ewe.

198—Steve, Southdown, exhibited by J V Muir, Clintonville, Ky.; bred by Chas. Swift, Winchester, Ky. Dropped February 1, 1878. Sire, Southdown ram; dam, Southdown ewe.

199—Bill, Southdown, exhibited by J. V Muir, Clintonville, Ky.; bred by Chas Swift, Winchester, Ky. Dropped February 1, 1878. Sire, Southdown ram; dam, Southdown ewe.

LOT 20—HEAVIEST FAT SHEEP.

Wether or Ewe, any age—6 entries.

200—Blank, Cotswold, exhibited by Abner Strawn, Ottawa; bred by Geo. Hickenbottom, Whitby, Can. Dropped March 21, 1878. Sire, Cotswold ram; dam, Cotswold ewe.

LOT 21—CAR-LOADS—2 entries.

201—Moses, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 15, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

202—Aaron, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 15, 1879. Sire, Shropshire ram, dam, ½ Cotswold, ½ Southdown ewe.

203—Jack, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 15, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

204—Caps, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 16, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

205—Colonel, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 16, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

206—John, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 17, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

207—Josh, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 18, 1879. Sire, Shropshire ram, dam, ½ Cotswold, ½ Southdown ewe.

208—Tom, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 19, 1879. Sire, Shropshire ram, dam, ½ Cotswold, ½ Southdown ewe.

209—Dick, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 20, 1879. Sire, Shropshire ram, dam, ½ Cotswold, ½ Southdown ewe.

210—Sherman, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 21, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

211—Lightfoot, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 22, 1879. Sire, Shropshire ram, dam, ½ Cotswold, ½ Southdown ewe.

212—Bob, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 23, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

213—General, grade Shropshire bred and exhibited by John Hudson, Moawequa. Dropped February 24, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

214—Hancock, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 25, 1879. Sire, Shropshire ram, dam, ½ Cotswold, ½ Southdown ewe.

215—Cronin, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 26, 1879. Sire Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

216—Grant, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped February 27, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

217—Arthur, grade Shropshire bred and exhibited by John Hudson, Moawequa, Dropped February 28, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

218—Sam, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 1, 1879. Sire, Shropshire ram dam, ½ Cotswold, ½ Southdown ewe.

219—Frank, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 2, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

220—Ben, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 3, 1879. Sire, Shropshire ram, dam, ½ Cotswold, ½ Southdown ewe.

221—Abe, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 4, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

222—Tim, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 5, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

223—Jim grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 6, 1879. Sire, Shropshire ram, dam, ½ Cotswold, ½ Southdown ewe.

224—Mansfield, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 7, 1879. Sire, Shropshire ram, dam, ½ Cotswold, ½ Southdown ewe.

225—Woodhull, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 8, 1879. Sire, Shropshire ram; dam, ½ Cotswold, ½ Southdown ewe.

226—Carter Harrison, grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 9, 1879. Sire, Shropshire ram, dam ½ Cotswold, ½ Southdown ewe.

227—Marshall Field, grade Shropshire, bred and exhibited by John Hunter, Moawequa. Dropped March 10, 1879 Sire, Shropshire ram, dam, ½ Cotswold, ½ Southdown ewe.

228—John Logan grade Shropshire, bred and exhibited by John Hudson, Moawequa. Dropped March 11 1879 Sire, Shropshire ram, dam, ½ Cotswold, ½ Southdown ewe.

229—David Davis grade Shropshire bred and exhibited by John Hudson, Moawequa. Dropped March 25, 1879 Sire, Shropshire ram, dam ½ Cotswold, ½ Southdown ewe.

230—No 1 Southdown, exhibited by Morrow & Muir Clintonville, Ky , bred by A Renick, Clintonville, Ky Dropped March 15 1879 Sire, Southdown ram, dam, Southdown ewe

231—No 2 Southdown exhibited by Morrow & Muir Clintonville Ky , bred by A Renick, Clintonville Ky Dropped March 15 1879 Sire Southdown ram, dam, Southdown ewe

232—No 3 Southdown, exhibited by Morrow & Muir, Clintonville Ky bred by A Renick, Clintonville Ky Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe

233—No 4 Southdown exhibited by Morrow & Muir Clintonville Ky , bred by A Renick, Clintonville, Ky Dropped March 15, 1879. Sire Southdown ram, dam, Southdown ewe

234—No 5 Southdown, exhibited by Morrow & Muir Clintonville Ky , bred by A Renick, Clintonville Ky Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe

235—No 6 Southdown, exhibited by Morrow & Muir Clintonville Ky , bred by A Renick, Clintonville, Ky Dropped March 15, 1879 Sire Southdown ram, dam, Southdown ewe

236—No 7 Southdown, exhibited by Morrow & Muir Clintonville Ky bred by A Renick, Clintonville Ky Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe

237—No 8, Southdown exhibited by Morrow & Muir Clintonville, Ky , bred by A Renick, Clintonville, Ky Dropped March 15 1879. Sire, Southdown ram, dam, Southdown ewe

238—No 9 Southdown exhibited by Morrow & Muir Clintonville Ky , bred by A Renick, Clintonville, Ky Dropped March 15, 1879 Sire, Southdown ram, dam Southdown ewe

239—No 10 Southdown, exhibited by Morrow & Muir Clintonville Ky , bred by A Renick, Clintonville, Ky Dropped March 15 1879 Sire, Southdown ram, dam, Southdown ewe

240—No 11 Southdown, exhibited by Morrow & Muir Clintonville Ky , bred by A Renick, Clintonville, Ky Dropped March 15, 1879 Sire, Southdown ram, dam Southdown ewe

241—No 12, Southdown, exhibited by Morrow & Muir Clintonville Ky bred by A Renick Clintonville, Ky Dropped March 15 1879 Sire, Southdown ram, dam Southdown ewe

242—No 13 Southdown, exhibited by Morrow & Muir, Clintonville, Ky bred by A Renick, Clintonville Ky Dropped March 15, 1879 Sire Southdown ram dam Southdown ewe

243—No 14 Southdown, exhibited by Morrow & Muir, Clintonville Ky , bred by A Renick, Clintonville, Ky Dropped March 15 1879 Sire Southdown ram, dam, Southdown ewe.

244—No 15, Southdown, exhibited by Morrow & Muir Clintonville Ky , bred by A Renick, Clintonville, Ky. Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe.

245—No 16, Southdown exhibited by Morrow & Muir Clintonville Ky , bred by A Renick, Clintonville, Ky Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe

246—No 17, Southdown, exhibited by Morrow & Muir, Clintonville, Ky , bred by A Renick, Clintonville, Ky. Dropped March 15, 1879 Sire Southdown ram, dam, Southdown ewe

247—No 18, Southdown, exhibited by Morrow & Muir, Clintonville, Ky , bred by A Renick, Clintonville, Ky Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe.

248—No. 19, Southdown, exhibited by Morrow & Muir, Clintonville, Ky ; bred by A. Renick, Clintonville, Ky. Dropped March 15, 1879. Sire, Southdown ram, dam, Southdown ewe.

249—No. 20, Southdown, exhibited by Morrow & Muir, Clintonville, Ky , bred by A. Renick, Clintonville, Ky. Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe.

250—No. 21, Southdown, exhibited by Morrow & Muir Clintonville, Ky , bred by A Renick, Clintonville, Ky. Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe.

251—No. 22 Southdown, exhibited by Morrow & Muir, Clintonville, Ky , bred by A. Renick, Clintonville, Ky. Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe.

252—No 23, Southdown, exhibited by Morrow & Muir Clintonville, Ky , bred by A Renick, Clintonville, Ky. Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe.

253—No 24, Southdown, exhibited by Morrow & Muir, Clintonville, Ky , bred by A Renick, Clintonville, Ky. Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe.

254—No 25, Southdown, exhibited by Morrow & Muir, Clintonville, Ky , bred by A Renick, Clintonville, Ky. Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe.

255—No 26, Southdown, exhibited by Morrow & Muir, Clintonville, Ky , bred by A Renick Clintonville, Ky Dropped March 15, 1879 Sire Southdown ram, dam Southdown ewe.

256—No 27, Southdown, exhibited by Morrow & Muir, Clintonville, Ky , bred by A. Renick, Clintonville, Ky Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe.

257—No 28, Southdown, exhibited by Morrow & Muir Clintonville, Ky , bred by A Renick, Clintonville, Ky. Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe.

258—No 29, Southdown, exhibited by Morrow & Muir Clintonville, Ky , bred by A Renick, Clintonville, Ky Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe.

259—No 30, Southdown, exhibited by Morrow & Muir, Clintonville, Ky , bred by A Renick, Clintonville, Ky. Dropped March 15, 1879 Sire, Southdown ram, dam, Southdown ewe.

CLASS D—SWINE.

DAVID GORE, *Superintendent*

LOT 23—BERKSHIRES

Barrow, 1 and under 2 years—1 entry

260—George, bred and exhibited by Taylor Bros , Waynesville Farrowed August 30, 1880. Sire, Berkshire boar, dam, Berkshire sow.

Sow, 1 and under 2 years—2 entries.

261—Miss Butterfly, bred and exhibited by Scheidt & Davis, Dyer, Ind. Farrowed May 2, 1880. Sire, Royal Butterfly, dam, Miss Emily.

262—Miss Butterfly II, bred and exhibited by Scheidt & Davis, Dyer, Ind. Farrowed May 2, 1880. Sire, Royal Butterfly, dam, Miss Emily.

LOT 24—POLAND CHINA.

Barrow, 1 and under 2 years—3 entries

263- Crown Prince, bred and exhibited by H C Castle, Wilmington. Farrowed December 10, 1879. Sire, Honest Tom, 283; dam, Bess 2d.

264—Prince Albert 5th, bred and exhibited by H. C. Castle, Wilmington. Farrowed October 15, 1880. Sire, Honest Tom, 283; dam, Queen, 218.

265—Prince Albert 6th, bred and exhibited by H. C. Castle, Wilmington. Farrowed October 15, 1880. Sire, Honest Tom, 283; dam, Queen, 218.

Sow, 1 and under 2 years—1 entry.

266—Black Rose, bred and exhibited by H. C. Castle, Wilmington. Farrowed December 10, 1879. Sire, Honest Tom, 283; dam, Bess 2d.

Sow, under 1 year—2 entries.

267—Oxford Rose, bred and exhibited by H. C. Castle, Wilmington. Farrowed February 20, 1881. Sire, Pilot, 707; dam, Lady Oxford, 1848.

268—Augusta 7th, bred and exhibited by H. C. Castle, Wilmington. Farrowed March 15, 1881. Sire, Pilot, 707; dam, Augusta 3d, 828.

LOT 25—CHESTER WHITE.

Barrow, 1 and under 2 years—1 entry.

269—Jim, exhibited by Taylor Bros., Waynesville; bred by J. Robb, Waynesville. Farrowed August 30, 1880. Sire, Chester White boar; dam, Chester White sow.

Sow, 1 and under 2 years—1 entry.

270—Beauty, bred and exhibited by Taylor Bros., Waynesville. Farrowed October 29, 1880. Sire, Chester White boar; dam, Chester White sow.

Sow under 1 year—2 entries.

271—Pet, bred and exhibited by J. A. Brown & Son, Decatur. Farrowed April 20, 1881. Sire, Tom Taylor, dam, Sally Brown.

272—Jane, bred and exhibited by Taylor Bros., Waynesville. Farrowed April 28, 1881. Sire, Chester White boar; dam, Chester White sow.

LOT 26—ESSEX.

Barrow under 1 year—3 entries.

273—Walter, bred and exhibited by Frank Willson, Jackson, Mich. Farrowed May 11, 1881. Sire, Essex boar; dam, Essex sow.

274—Major, bred and exhibited by Frank Willson, Jackson, Mich. Farrowed May 11, 1881. Sire, Essex boar; dam, Essex sow.

275—Willson, bred and exhibited by Taylor Bros., Waynesville. Farrowed January 1, 1881. Sire, Essex boar; dam, Essex sow.

Sow 1 and under 2 years—2 entries

276—Brunette, bred and exhibited by Frank Willson, Jackson, Mich. Farrowed May 28, 1880. Sire, Essex boar; dam, Essex sow.

277—Sarah, exhibited by Taylor Bros., Waynesville, bred by Robt. Ball, Hennepin. Farrowed August 30, 1880. Sire, Essex boar, dam Essex sow.

Sow under 1 year—3 entries.

278—Belle, bred and exhibited by Frank Willson, Jackson, Mich. Farrowed April 19, 1881. Sire, Essex boar; dam, Essex sow

279—Mary, bred and exhibited by Frank Willson, Jackson, Mich. Farrowed April 19, 1881. Sire, Essex boar; dam, Essex sow.

280—Belle, bred and exhibited by Taylor Bros., Waynesville. Farrowed January 1, 1881. Sire, Essex boar; dam, Essex sow.

LOT 27—GRADES OR CROSSES

Barrow 1 and under 2 years—1 entry

281—Ben, grade Suffolk, bred and exhibited by Frank Willson, Jackson, Mich Farrowed March 22, 1880; Sire Sufford boar, dam, Essex sow

Barrow under 1 year—2 entries

282—Duke, exhibited by Harry Davis, Dyer, Ind., bred by Scheidt & Davis, Dyer, Ind Farrowed November 28, 1880 Sire, Victoria boar, dam, Victoria sow

283—Hector, bred and exhibited by Scheidt & Davis, Dyer, Ind Farrowed November 28, 1880. Sire, Victoria boar, dam, Victoria sow

Sow 1 and under 2 years—2 entries.

284—Queen Victoria, bred and exhibited by Scheidt & Davis, Dyer, Ind, Farrowed June 12, 1880. Sire, Victoria boar, dam, Victoria sow.

285—Fannie Field, bred and exhibited by Scheidt & Davis, Dyer, Ind. Farrowed June 12, 1880. Sire, Victoria boar, dam, Victoria sow

Sow under 1 year—4 entries

286—Duchess, bred and exhibited by Scheidt & Davis, Dyer, Ind. Farrowed November 28, 1880. Sire, Victoria boar, dam, Victoria sow

287—White Lady bred and exhibited by Scheidt & Davis Dyer, Ind Farrowed November 28, 1880 Sire, Victoria boar, dam Victoria sow

288—Topsy, bred and exhibited by Scheidt & Davis, Dyer, Ind Farrowed November 28, 1880 Sire, Victoria boar dam Victoria sow

289—Nellie grade Suffolk, bred and exhibited by Taylor Bros. Waynesville Farrowed February 1, 1881 Sire Suffolk boar dam, ½ Chester White, ½ Suffolk sow

LOT 28—SWEEPSTAKES.

Barrow 1 and under 2 years—7 entries

290—Muskogee bred and exhibited by Thos Bennett, Rossville. Farrowed June 18, 1880. Sire, Red Chief 1st, dam Red Rose 1st

LOT 29—GRAND SWEEPSTAKES.

Best Barrow or Sow in the Show—17 entries

291—Trinket, Berkshire bred and exhibited by A. J Thompson, Downer's Grove Farrowed March 28, 1878. Sire, Berkshire boar, dam, Berkshire sow

LOT 30—HEAVIEST FAT HOG—11 entries.

292—Buster, Poland China exhibited by Taylor Bros, Waynesville bred by Jacob Leeper, Clinton, Farrowed May 1, 1878 Sire Poland China boar, dam Poland China sow

293—Bell, grade Berkshire, bred and exhibited by Scheidt & Davis, Dyer Ind Farrowed December 2, 1878 Sire, Berkshire boar, dam, Poland China sow

TABLE OF MEASUREMENTS, ETC.

No. of Animal	Class, Lot and Name of Animal.	MEASUREMENTS.						HEIGHT FROM GROUND.								Depth from top line to lower shoulder point		Thickness through the crop		Length of back from top of shoulder to loin		Width across the loins		Length of quarter from loin to rump.		Depth from loin to hock		Girth of paunch (middle)		Girth of throat latch	
		Ledgth of carcass		Heart girth		Flank girth		Top line.				Bot.line.																			
								Shouldr.		Hip		Fore flank.		Flank																	
		Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
	CLASS A—CATTLE.																														
	Lot 1—Shorthorns.																														
	Steer 3 and under 4 years.																														
	FIRST PREMIUM NO 3—SECOND PREMIUM NO 2—THIRD PREMIUM NO. 1.																														
1	Abe Renie	7	3	8	4	8	6	5	1	5		2	1	2	6	2	8	2	4	3	3	2	6	2	...	3	10	9	3	3	8
2	Boynton	6	11	8	1	7	8	4	10	4	10	2	..	2	7	2	6	2	4	3	6	2	4	1	8	3	9	9	....	3	6
3	Morris	7	3	8	5	8	5	5	1	5	1	2	2	2	6	2	5	2	4	3	5	2	4	2	1	3	10	9	....	4	....
	Steer 2 and under 3 years.																														
	FIRST PREMIUM NO. 8—SECOND PREMIUM NO. 4—THIRD PREMIUM NO. 10.																														
4	Airdrie Boy	7	3	7	11	7	8	5	.	4	11	2	1	2	6	2	5	2	4	3	4	2	4	1	10	3	9	8	9	3	4
5	Mary Boy	6	7	7	4	7	3	4	7	4	8	2	..	2	4	2	3	2	...	3	1	1	10	1	9	3	5	8	5	3	2
6	Corporal	6	10	7	11	8		4	11	5	.	2	1	2	8	2	7	2	4	3	6	2	3	1	9	3	9	8	11	3	4
7	Perfect	6	6	7	1	6	10	4	5	4	5	1	11	2	4	2	1	1	10	3	1	2	2	1	8	3	3	7	8	3	....
8	Muir	6	7	7	10	7	8	4	9	4	9	2	.	2	5	2	7	2	2	3	5	2	1	1	8	3	8	8	7	3	6
9	Belton	6	7	7	4	7	3	4	11	5		2	3	2	8	2	9	1	11	3	1	1	11	1	9	3	3	8	1	3	1
10	Quid Esset	6	7	7	..	7	1	4	8	4	8	2	1	2	5	2	6	1	10	3	4	1	11	1	7	3	3	7	9	3	2

Cow 3 years old or over.

FIRST PREMIUM NO 11—SECOND PREMIUM NO. 13—THIRD PREMIUM NO. 12.

11	Lady Aberdeen 3d	7	1	8	1	8	4	4	6	4	8	1	10	2	2	2	6	2	3	2	11	2	5	2	1	3	9	8	10	3	5
12	Geneva's Pride	7	3	7	10	8	6	4	9	4	9	1	11	2	..	2	7	2	1	3	1	2	5	2	....	3	8	8	11	3	2
13	Miss Mollie Bates 4th	6	11	7	6	7	8	4	7	4	8	1	11	2	4	2	9	2	5	3	6	2	4	1	8	3	8	8	8	3	1
14	Airdrienne 4th	6	9	7	1	7	2	4	9	4	9	2	2	2	8	2	7	1	10	3	6	2	2	1	9	3	2	7	11	3	....

Lot 2—Herefords.

Steer 3 and under 4 years.

FIRST PREMIUM NO. 15—SECOND PREMIUM NO 16.

15	Will	6	9	7	11	8	1	4	8	4	8	2	..	2	4	2	10	2	5	3	5	2	5	1	9	3	7	8	10	3	10
16	Washington	6	10	8	1	7	11	4	7	4	8	1	9	2	4	2	10	2	2	3	5	2	4	1	10	3	5	8	8	3	8

Cow 3 years old or over.

FIRST PREMIUM NO. 17—SECOND PREMIUM NO 19—THIRD PREMIUM NO 18.

17	Maid of the Mist	6	9	7	4	7	4	4	2	4	2	1	8	1	10	2	4	2	2	3	5	2	1	1	8	3	5	8	6	3	2
18	Lady Elliott, 2150	6	8	7		7		4	2	4	2	1	9	2	..	2	....	2	....	3	....	2	....	1	9	3	....	7	8	3	2
19	May Queen 2d	6	1	7	6	7	6	4	2	4	4	1	9	2	..	2	3	2	2	3	....	2	1	1	8	3	8	8	3	2	9

Lot 3—Devons.

Steer 3 and under 4 years.

FIRST PREMIUM NO 21—SECOND PREMIUM NO. 20

20	Buck	6	5	6	6	6	6	4	5	4	4	2	2	2	6	2	6	1	8	3	4	1	9	1	6	2	11	7	6	3	1
21	Broad	5	10	6	3	6	1	4	3	4	3	2		2	6	2	2	1	7	2	11	1	10	1	5	2	10	7	6	3	5

Steer 2 and under 3 years.

FIRST PREMIUM NO. 23—SECOND PREMIUM NO. 22—THIRD PREMIUM NO 24.

22	Tom	5	8	6	3	6	1	4	2	4	2	1	11	2	5	2	4	1	7	2	11	1	9	1	8	2	9	6	11	2	11
23	Jerry	5	8	6	4	5	11	4		4	1	1	11	2	3	2	3	1	9	3	...	1	8	1	5	2	10	7	....	3	2
24	John	5	11	6	1	6	.	4	1	4	2	2	1	2	6	2	2	1	7	2	10	1	8	1	5	2	10	6	11	2	11

Steer 1 and under 2 years.

FIRST PREMIUM NO 26—SECOND PREMIUM NO. 25—THIRD PREMIUM NO. 27.

25	Bill	5	9	5	8	5	8	4	..	4	1	1	2	2	5	1	11	1	8	2	10	1	8	1	4	2	8	6	10	2	10
26	Jim	5	6	5	10	5	8	4	1	4	2	2	1	2	7	2	....	1	8	2	8	1	4	1	4	2	7	6	6	2	10
27	Max	5	6	5	6	5	6	3	10	3	11	2	..	2	3	1	9	1	3	2	8	1	7	1	4	2	6	6	5	2	9

Table of Measurements, Etc.—Continued.

No. of Animal	Class, Lot and Name of Animal.	Measurements.						Height from Ground.								Depth from top line to lower shoulder point		Thickness through the crop		Length of back from top of shoulder to loin		Width across the loins		Length of quarter from loin to rump		Depth from loin to hock		Girth of paunch (middle)		Girth of throat latch.	
		Length of carcass		Heart girth		Flank girth		Top line				Bot. line																			
								Should'r		Hip		Fore flank		Flank																	
		Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In	Ft	In	Ft	In.	Ft.	In.	Ft.	In.
	Lot 4—Other Pure Beef Breeds, not named.																														
	No entry.																														
	Lot 5—Grades or Crosses.																														
	Steer 3 and under 4 years.																														
	FIRST PREMIUM NO. 43—SECOND PREMIUM NO. 48—THIRD PREMIUM NO. 34.																														
28	McCue	7	.	8	3	8	2	4	10	4	10	1	10	2	6	2	8	2	3	3	5	2	2	1	10	3	10	9	10	3	4
29	Pell	6	9	8	4	8	1	4	10	4	10	1	11	2	5	2	10	2	5	3	4	2	3	1	10	3	8	9	3	3	5
30	Read	7	1	8	3	8	2	4	9	4	10	1	10	2	4	2	11	2	5	3	7	2	6	1	11	3	9	9	3	3	6
31	McMullen	7	5	8	3	8	2	5	1	5	1	2	2	2	7	2	10	2	3	3	8	2	3	1	10	3	9	9	2	3	5
32	Blood	7	2	8	6	8		4	8	4	9	1	11	2	4	2	8	2	4	3	7	2	3	1	9	3	8	9	2	3	2
33	Blackstone	6	5	8		7	8	4	8	4	8	1	11	2	5	2	9	2	2	3	3	2	2	1	9	3	8	8	8	3	7
34	Barney	6	11	8	7	8		4	8	4	7	2	1	2	3	2	11	2	7	3	3	2	4	1	11	3	9	9	4	3	2
35	Phil Sheridan	7	.	8	2	8	3	5		5	.	2	2	2	8	2	10	2	1	3	6	2	4	1	10	3	9	9	1	3	6
36	Broad Horns	6	8	8	5	8	3	4	8	4	8	1	11	2	1	2	8	2	3	3	....	2	4	1	10	3	5	9	1	3	8
37	Red Chub	7	2	7	11	8		4	10	4	11	2	1	2	4	2	7	2	1	3	7	2	1	1	8	3	8	9	3	3	6
38	Pickrell	7	3	7	9	7	11	4	9	4	11	2	2	2	9	2	8	2	2	3	8	2	1	1	9	3	6	8	8	3	5
39	Sam Noe	7	2	7	8	7	9	4	11	5		2	3	2	9	2	9	2	2	3	8	2	1	1	9	3	7	8	10	3	8
40	Increase	7	5	8		8	1	5		4	11	2	1	3	6	2	11	2	1	3	5	2	2	1	9	3	7	8	11	3	5
41	Beveridge	7	1	8		7	11	4	7	4	7	1	10	2	4	2	5	2	2	3	6	2	5	1	9	3	4	8	5	3	5
42	Tom Brown	6	11	7	5	7	4	4	7	4	7	2		2	5	2	6	2	....	3	6	2	2	1	9	3	4	8	4	3	6
43	Conqueror	6	9	8	4	8	3	4	8	4	8	1	10	2	3	2	11	2	3	3	5	2	4	1	11	3	8	9	2	3	10
44	Oxford	5	10	7	3	7	1	4	5	4	4	1	10	2	2	2	8	2	....	3	5	2	....	1	8	3	3	8	2	3	6
45	Bachelor	7	1	7	3	8		4	8	4	11	1	11	2	4	2	9	2	3	3	6	2	5	1	10	3	8	9	....	3	7
46	Hawks	6	10	8	7	8	4	4	10	4	10	1	9	2	5	2	5	2	5	3	5	2	7	1	10	3	7	9	6	3	5
47	Cunningham	6	9	7	10	7	10	4	7	4	8	1	11	2	5	2	8	2	3	3	5	2	4	1	8	3	8	8	11	3	5
48	Talbott	7	.	8	3	8	3	4	11	4	11	2	.	2	6	2	8	2	1	3	5	2	4	1	10	3	8	9	2	3	7

49 Frosty	6	10	7	10	7	10	4	9	4	10	2	..	2	5	2	7	2	1	3	4	2	3	1	8	3	9	8	9	3	6
50 Dick	7	1	7	9	7	9	5	.	5	1	2	2	2	7	2	6	2	2	3	7	2	4	1	9	3	6	8	7	3	8
51 Tom	6	10	7	11	7	10	4	10	4	11	2	4	2	7	2	9	2	2	3	3	2	3	1	9	3	6	8	8	3	8
52 Lunce	6	11	7	10	7	10	4	10	4	10	2	.	2	6	2	9	2	4	3	6	2	5	1	8	3	8	8	8	3	4
53 Samson	6	11	8		8	2	4	11	5	1	2	1	2	6	2	9	2	...	3	8	2	3	1	8	3	9	8	11	3	6
54 Clay	6	7	7	10	7	8	4	9	4	10	1	11	2	5	2	7	2	2	3	5	2	2	1	8	3	7	8	9	3	3
55 Bush	7	3	8	3	7	11	4	8	4	10	1	10	2	6	2	6	2	2	3	8	2	2	1	9	3	6	8	11	3	4
56 Lem	7	1	8	3	8	1	4	11	5	1	2	1	2	9	2	9	2	2	3	8	2	2	1	9	3	9	9	3	3	6
57 Cloud	6	11	8	1	8	2	4	10	4	10	2	1	2	8	2	11	2	3	3	3	2	3	1	10	3	9	8	9	3	7
58 Short Sir	6	6	7	8	7	6	4	10	4	11	2	1	2	8	2	6	1	10	3	3	2	1	1	9	3	6	8	6	3	2
59 Quid si nam	6	11	8	..	7	9	4	11	5	..	2	1	2	8	2	8	2	2	3	6	2	2	1	9	3	6	8	8	3	6
60 Quid	7	1	8		8	.	4	9	4	10	2	7	2	..	2	11	2	2	3	4	2	3	1	10	3	5	8	9	3	2
61 Downhorn	7	..	8	..	7	11	4	10	4	11	2	2	2	6	2	10	2	1	3	5	2	2	1	10	3	7	8	10	3	5

Steer 2 and under 3 years.

FIRST PREMIUM No. 77—SECOND PREMIUM NO. 64—THIRD PREMIUM NO. 85.

62 John Sherman	6	6	7	11	7	7	4	8	4	9	2	..	2	6	2	8	2	....	3	5	2	2	1	9	3	5	8	7	3	2
63 Cherry	7	2	7	7	7	7	4	10	4	11	2	2	2	5	2	9	2	1	3	8	2	3	1	9	3	7	8	8	3	8
64 Oakley	6	9	7	7	7	5	4	7	4	8	2	1	2	4	2	8	2	1	3	5	2	2	1	8	3	4	8	5	3	5
65 Clincher	6	9	8	6	7	3	4	8	4	9	2	1	2	6	2	3	2	....	3	4	2	....	1	9	3	5	8	4	3	5
66 Chance	6	7	7	8	7	4	4	9	4	9	2	2	2	8	2	8	2	2	3	2	2	2	1	9	3	5	8	3	3	6
67 Cash	6	3	7	8	7	10	4	9	4	10	2	2	2	7	2	7	2	....	3	6	2	2	1	8	3	4	8	9	3	5
68 Garfield	6	6	7	3	7	2	4	7	4	9	2	2	2	7	2	5	2	....	3	4	1	11	1	7	3	4	8	1	3	6
69 Arthur	6	8	7	5	7	1	4	6	4	8	2	1	2	7	2	5	2	2	3	7	2	1	1	7	3	2	7	10	3	4
70 Storm	6	7	7	2	6	11	4	8	4	9	2	1	2	5	2	6	1	10	3	4	2	2	1	8	3	4	7	10	3	2
71 Chub	6	6	7	4	7	3	4	8	4	8	2	3	2	9	2	9	2	....	3	4	2	....	1	7	3	3	8	3	3	6
72 Wild Bill	6	11	7	9	7	10	4	9	4	11	2	2	2	10	2	8	2	2	3	4	2	3	1	9	3	9	8	5	3	9
73 Right	6	10	7	7	7	7	4	8	4	8	5	.	2	5	2	7	2	4	3	3	2	4	1	9	3	2	8	6	3	7
74 Left	7	..	7	6	7	5	4	5	4	7	1	11	2	5	2	7	2	4	3	5	2	2	1	10	3	6	8	5	3	4
75 Spot Face	6	7	7	2	7	1	4	3	4	4	1	10	2	2	2	5	2	2	3	7	2	1	1	9	3	2	8	1	.2	10
76 Royal Charmer	6	11	7	6	7	9	4	6	4	8	2	1	2	7	2	6	2	1	3	6	2	3	1	8	3	4	8	7	3	3
77 Red Lord	6	4	7	5	7	9	4	7	4	8	2		2	7	2	11	2	....	3	6	2	2	1	8	3	5	8	4	3	6
78 Thad. Stevens	6	11	7	5	7	6	4	11	5		2	3	2	9	2	7	2	1	3	7	2	1	1	9	3	5	8	8	3	3
79 Baron	6	9	6	11	7	1	4	7	4	7	2	2	2	7	2	6	2	....	3	6	1	11	1	7	3	4	7	11	3	2
80 Sensation	7		7	6	7	9	4	11	4	11	2	2	2	7	2	7	2	....	3	8	2	3	1	9	3	6	8	9	3	4
81 John Bull	7	2	7	8	7	7	5	2	5		2	2	2	7	2	7	2	..	3	10	2	...	1	10	3	8	8	6	3	6
82 Echerd	6	9	7	2	7	2	4	7	4	9	2		2	5	2	5	1	11	3	4	1	10	1	8	3	5	7	11	3	3
83 Col. Mills	7	2	7	6	7	5	4	11	4	11	2	3	2	8	2	9	2	3	3	6	2	....	1	8	3	7	8	5	3	6
84 Cherub	6	10	7	5	7	6	4	11	5		2	3	2	9	2	2	2	....	3	1	2	1	1	10	3	11	8	2	3	6
85 Kansas	7	5	7	8	7	8	4	8	4	8	2	.	2	4	2	8	2	2	3	9	2	4	1	9	3	5	9	...	3	5
86 Ab. Piatt	6	4	7	8	7	7	4	6	4	6	1	11	2	2	2	6	2	5	3	2	2	3	1	8	3	4	8	9	3	6
87 Quid Sit	6	2	7	3	7	5	4	8	4	9	2	1	2	7	2	6	2	....	3	3	2	2	1	7	3	5	8	2	3	5
88 Si Quid	6	3	7	3	7	3	4	7	4	7	2	2	2	5	2	6	2	1	3	2	2	1	1	8	3	4	8	1	3	6
89 Quid Nunc	6	6	7	1	6	10	4	9	4	9	2	1	2	9	2	4	1	10	3	2	1	10	1	8	3	2	7	9	3	4
90 Quid Nam	6	7	7	4	7	1	4	8	4	9	2	1	2	6	2	6	2	....	3	4	2	....	1	8	3	5	7	10	3	2
91 Nam Si	6	6	7	1	6	10	4	9	4	10	2	3	2	10	2	7	1	10	3	4	1	10	1	8	3	3	7	8	3	....
92 Si Nam	6	8	7	2	7	1	4	9	4	8	2	2	2	6	2	8	1	11	3	4	1	11	1	8	3	4	8	....	3	1
93 Nam Quid	6	5	7	3	7	3	4	10	4	11	2	3	2	8	2	8	2	....	3	7	1	11	1	8	3	6	8	1	3	6
94 Slow Go	6	6	7	2	7	2	4	9	4	9	2	2	2	8	2	7	2	....	3	3	2	....	1	8	3	3	8	....	3	2

Table of Measurements, Etc.—Continued.

No. of Animal	Class, Lot and Name of Animal.	MEASUREMENTS. Length of carcass. Ft	MEASUREMENTS. Length of carcass. In	MEASUREMENTS. Heart girth... Ft	MEASUREMENTS. Heart girth... In	MEASUREMENTS. Flank girth. Ft	MEASUREMENTS. Flank girth. In	HEIGHT FROM GROUND. Top line. Should'r Ft	HEIGHT FROM GROUND. Top line. Should'r In	HEIGHT FROM GROUND. Top line. Hip.... Ft	HEIGHT FROM GROUND. Top line. Hip.... In	HEIGHT FROM GROUND. Bot.line. Fore flank.. Ft	HEIGHT FROM GROUND. Bot.line. Fore flank.. In	HEIGHT FROM GROUND. Bot.line. Flank.. Ft	HEIGHT FROM GROUND. Bot.line. Flank.. In	Depth from top line to lower shoulder point.............. Ft.	Depth from top line to lower shoulder point.............. In.	Thickness through the crop.... .... Ft.	Thickness through the crop.... .... In.	Length of back from top of shoulder to loin .... Ft.	Length of back from top of shoulder to loin .... In.	Width across the loins......... ...... Ft.	Width across the loins......... ...... In.	Length of quarter from loin to rump. Ft.	Length of quarter from loin to rump. In.	Depth from loin to hock.... ... . Ft.	Depth from loin to hock.... ... . In.	Girth of paunch (middle).......... Ft.	Girth of paunch (middle).......... In.	Girth of throat latch Ft.	Girth of throat latch In.
	Steer 1 and under 2 years.																														
	FIRST PREMIUM NO. 97—SECOND PREMIUM NO. 96—THIRD PREMIUM NO. 99.																														
95	Curly	5	11	6	3	6	4	4	2	4	5	2	1	2	4	2	1	1	7	3	2	1	8	1	5	3	....	7	....	3	....
96	Geo Washington	6		6	7	6	9	4	4	4	6	2	1	2	6	2	3	1	9	3	1	1	11	1	6	3	1	7	9	3	1
97	Major	6	7	7	2	7	4	4	7	4	8	2	1	2	6	2	4	2	....	3	1	2	1	1	9	3	6	8	....	3	5
98	Red Acomb	6	6	6	11	7		4	6	4	7	2	.	2	6	2	3	2	1	3	4	2	....	1	6	3	4	7	7	3	5
99	Bailey	6	2	6	7	6	10	4	2	4	4	1	10	2	2	2	3	1	10	3	..	1	8	1	6	3	...	7	6	3	2
	Cow 3 years old or over.																														
	FIRST PREMIUM NO. 100—SECOND PREMIUM NO. 101.																														
100	Lady Peerless	6	2	7	7	7	6	4	6	4	8	2	.	2	5	2	6	2	....	3	2	2	3	1	9	3	4	8	1	3	4
101	Beefy Back	7	..	7	11	8	7	4	7	4	8	1	9	1	9	2	10	2	2	3	5	2	4	2	....	3	10	8	11	3	6
	Lot 7—Grand Sweepstakes.																														
	Best Steer or Cow in the show.																														
	PREMIUM NO. 31.																														
102	Eddy Morris	7	9	9	3	8	10	5	1	5	2	2		2	6	2	11	2	9	3	7	2	6	2	....	4	....	9	9	3	7
103	Florid Duke	7	9	8	8	8	9	5	1	5	2	2		2	7	2	9	2	2	3	7	2	4	2	....	4	....	9	7	3	9
104	Star	8		9		8	5	5	4	5	3	2		2	9	2	9	2	5	3	....	2	3	2	....	4	1	9	8	4	....
105	Bell	7	3	8	3	8	5	4	9	4	11	1	11	2	4	2	6	2	2	3	9	2	3	1	9	3	11	9	4	3	6
106	Conover	8	2	9	4	9	1	5	4	5	5	2	1	2	6	2	11	2	6	3	7	2	6	2	2	4	2	10	3	4	....

	Lot 8—Car Loads.																														
	Lot of 8 Cattle 3 and under 4 years.																														
115	Belmont	7	5	8	2	7	11	5	1	4	11	2		2	7	2	9	2	3	3	8	2	5	1	10	3	10	8	10	3	9
116	Jim Blaine	6	10	8	2	8	2	4	10	5		1	11	2	6	2	9	2	2	3	3	2	2	1	9	3	9	9	....	3	9
117	Frank	7	2	7	9	8		4	10	5	.	2	1	2	5	2	8	1	11	3	6	2	3	1	10	3	9	8	8	3	4
118	Robin Hood	7		7	10	7	9	4	9	4	10	1	9	2	5	2	4	2	2	2	4	2	2	1	9	3	7	8	7	3	9
	Lot 11—Heaviest Fat Steer.																														
	Open to all ages.																														
	FIRST PREMIUM NO. 120—SECOND PREMIUM NO. 106—THIRD PREMIUM NO. 121.																														
119	Gen. Grant	7	7	8	10	8	4	4	11	5		1	10	2	5	3	..	2	7	3	5	2	5	2	1	4	1	9	9	3	8
120	Nels. Morris	8	2	9	9	9	7	5	5	5	5	2		2	6	2	11	2	9	3	11	2	10	2	2	4	...	10	....	3	10
121	Tim	8	5	8	11	9	6	5	9	5	7	2	4	2	10	3	...	2	3	4	...	2	9	2	5	4	3	10	....	3	9
122	Freeport	8	1	9	1	9		5	3	5	4	2	1	2	6	3	...	2	1	3	7	2	6	2	2	4	3	10	....	3	7
123	Stephenson	7	6	8	4	8	1	5	2	5	2	2	2	2	8	2	...	2	4	3	9	2	3	1	11	3	11	9	2	3	5
124	Foote	7	4	9	2	8	6	5	1	5	1	2	1	2	6	2	11	2	8	3	7	2	5	2	....	3	11	9	8	3	8
125	Vermilion	7	6	8	8	8	8	5		5		1	11	2	5	2	11	2	5	3	11	2	6	1	11	3	10	9	6	3	10

Table of Measurements, Etc.—Continued.

No. of Animal	Class, Lot and Name of Animal.	Measurements. Length of Carcass Ft.	Measurements. Length of Carcass In.	Measurements. Heart Girth Ft.	Measurements. Heart Girth In.	Measurements. Flank Girth Ft.	Measurements. Flank Girth In.	Height from Ground. Top line. Should'r Ft.	Height from Ground. Top line. Should'r In.	Height from Ground. Top line. Hip Ft.	Height from Ground. Top line. Hip In.	Height from Ground. Bot. line. Fore flank Ft.	Height from Ground. Bot. line. Fore flank In.	Height from Ground. Bot. line. Flank Ft.	Height from Ground. Bot. line. Flank In.
	CLASS C—SHEEP.														
	Lot 14—Long Wools.														
	Wether 2 and under 3 years.														
	FIRST PREMIUM NO. 139—SECOND PREMIUM NO. 141. THIRD PREMIUM NO. 140.														
139	Dick	3	10	4	4	4	2	3				1		1	3
140	Curly	3	11	4	5	4	4	2	9			1	2	1	4
141	Tom	3	9	4	11	4	8	3	2			1	2	1	4
142	Dick	3	11	4	8	4	5	3	6			1	5	1	6
143	Harry	3	9	4	8	4	8	2	11			1	3	1	4
	Wether 1 and under 2 years.														
	FIRST PREMIUM NO. 146—SECOND PREMIUM NO. 144. THIRD PREMIUM NO. 145.														
144	Billy	3	8	4	2	3	11	2	11			1	2	1	3
145	Tommy	3	8	3	11	3	9	2	10			1	2	1	3
146	Sandy	3	6	4	5	4	1	3	1			1	4	1	6
	Ewe 2 and under 3 years.														
	FIRST PREMIUM NO. 147.														
147	Daisy	3	7	4	5	4	5	2	9			1		1	1
	Ewe 1 and under 2 years.														
	FIRST PREMIUM NO. 150—SECOND PREMIUM NO. 153 THIRD PREMIUM NO. 149.														
148	Wonder														
149	Perfection	4	1	4	3	4	1	3				1	3	1	4
150	Maud S	3	4	4	11	4	2	3	1			1	3	1	4
151	Lovely														
152	No 475														
153	No. 476	3	8	4	8	4	2	2	10			1	3	1	6
154	No. 478														
	Ewe under 1 year.														
	FIRST PREMIUM NO. 157—SECOND PREMIUM NO 159. THIRD PREMIUM NO. 158														
155	Willson 1st														
156	Willson 2d														
157	No. 465	3	5	3	11	3	11	2	9			1	3	1	4
158	No. 466	3	4	3	9	3	8	2	8			1	3	1	4
159	No. 467	3	6	3	11	3	10	2	9			1	3	1	5
	Lot 15—Middle Wools.														
	Wether 2 and under 3 years.														
	FIRST PREMIUM NO. 165- SECOND PREMIUM NO. 166. THIRD PREMIUM NO. 162.														
160	Bally														
161	Jack														
162	Charley	3	10	4	1	4	4	2	8			1	3	1	4
163	Swift														
164	Ford														
165	Model	3	8	4	8	4	5	2	11			1	3	1	5
166	Major	3	8	4	6	4	6	2	11			1	3	1	3

Table of Measurements, Etc.—Continued.

No. of Animal	Class, Lot and Name of Animal.	MEASUREMENTS.						HEIGHT FROM GROUND.							
								Top line				Bot. line			
		Length of Carcass..		Heart Girth		Flank Girth		Should'r		Hip		Fore flank.		Flank. .	
		Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
	Wether 1 and under 2 years.														
	FIRST PREMIUM NO. 170—SECOND PREMIUM NO. 169. THIRD PREMIUM NO. 172.														
167	Tom	..	..	..	..	..	..	..	..	..	..	..	..	..	..
168	Dick	3	1	3	11	3	11	2	6	.	..	1	1	1	2
169	Harry	3	6	3	9	3	10	2	6	..	..	1	2	1	4
170	Monarch	3	6	4	2	4	1	1	9	.		1	2	1	4
171	Milton	..	..	..	..	..	..	..	..	..	..	..	..	..	..
172	Duncan	3	7	4	1	4	4	2	9	.	.	1	2	1	2
173	Donald	3	3	3	11	3	11	2	5	..	.	1	2	1	2
	Wether under 1 year														
	FIRST PREMIUM NO. 174—SECOND PREMIUM NO. 175.														
174	No. 21	3	1	3	3	3	3	2	4	.	..	1	..	1	1
175	No. 28	3	3	3	3	3	2	2	4	..	..	1	..	1	..
	Ewe 2 and under 3 years.														
	FIRST PREMIUM NO. 176.														
176	Lady	3	8	4	5	4	4	2	11	..	.	1	1	1	3
	Lot 16—Fine Wools.														
	No entry.														
	Lot 17—Grades or Crosses.														
	Wether 2 and under 3 years.														
	FIRST PREMIUM NO. 178—THIRD PREMIUM NO. 177.														
177	Horace Greeley	3	6	4	1	4	.	2	11		..	1	3	1	5
178	Arkel	3	9	4	10	4	9	2	11	..	.	1	3	1	3
	Wether 1 and under 2 years.														
	FIRST PREMIUM NO. 180—SECOND PREMIUM NO. 181. THIRD PREMIUM NO. 182.														
179	Diamond	..	..	..	..	..	..	..	..	..	..	..	..	..	..
180	Jim	3	7	4	5	4	2	2	11		.	1	2	1	3
181	Ned	3	5	4	5	4	4	3	.	.	.	1	3	1	4
182	Mack	3	2	4	5	4	4	2	8	..		1	2	1	2
	Wether under 1 year.														
	FIRST PREMIUM NO. 185—SECOND PREMIUM NO. 184. THIRD PREMIUM NO. 183.														
183	Parnell	3	5	3	9	3	9	2	5	.	..	1	3	1	4
184	John	..	..	..	..	..	..	..	..	..	..	..	..	..	..
185	Abe	3	4	4	1	3	10	2	7	.		1	1	1	2
	Ewe 2 and under 3 years														
	FIRST PREMIUM NO. 186.														
186	Vic Woodhull	8	7	4	.	3	10	2	10	..	..	1	3	1	5

Table of Measurements, Etc.—Continued.

No. of Animal	Class, Lot and Name of Animal.	Measurements. Length of Carcass.. Ft.	In.	Heart Girth Ft.	In.	Flank Girth Ft.	In.	Height from Ground. Top line. Should'r Ft.	In.	Hip ..... Ft.	In.	Bot. line. Fore flank Ft.	In.	Flank... Ft.	In.
	Ewe 1 and under 2 years.														
	FIRST PREMIUM NO. 188—SECOND PREMIUM NO. 189. THIRD PREMIUM NO. 190.														
187	Nannie	..	..	..	..	..	..	..	..	..		.	..	..	.
188	Peggy	3	7	4	5	4	3	2	9		.	1	3	1	4
189	Betty	3	6	4	4	4	4	2	9	..		1	2	1	2
190	Flora	3	7	4	2	4	2	2	8		.	1	1	1	2
	Ewe under 1 year.														
	FIRST PREMIUM NO. 194—SECOND PREMIUM NO. 193. THIRD PREMIUM NO. 192.														
191	Miss Nancy	.		..	..		.			.	.				
192	Lilly	3	1	3	11	3	11	2	5	.	.	1	2	1	1
193	Daisy	3	.	3	9	3	8	2	5	.			11		11
194	Rosy	3	1	3	11	3	11	2	7		..	1		1	1
195	Jennie	3	1	4	1	4	2	2	5	.	.		10		10
196	Eugenia	2	10	3	3	3	3	2	4			1		1	..

Table of Measurements, Etc.—Continued.

No. of Animal	Class, Lot and Name of Animal.	Measurements.						Height from Ground.								Depth from top line to lower shoulder point		Thickness through the crop		Length of back from top of shoulder to loin		Width across the loins		Length of quarter from loin to rump.		Depth from loin to hock		Girth of paunch (middle)		Girth of throat latch	
		Length of carcass		Heart girth		Flank girth		Top line.				Bot. line																			
								Should'r		Hip		Fore flank		Flank																	
		Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft	In	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In	Ft.	In.	Ft.	In.	Ft	In.
	CLASS D—SWINE.																														
	Lot 23—Berkshires.																														
	Barrow 1 and under 2 years.																														
	FIRST PREMIUM NO. 260.																														
260	George	3	10	4	11	5	1	2	10	2	10		8		9	2	1	1	4	1	10	1	3	1	7	2	7	5	4	3	10
	Sow 1 and under 2 years.																														
	FIRST PREMIUM NO. 261—SECOND PREMIUM NO. 262																														
261	Miss Butterfly	4	9	5	7	5	5	2	10	2	9		6		7	2	3	1	8	2	1	1	5	1	6	2	5	5	6	3	10
262	Miss Butterfly 2d	4	2	5	2	5		2	10	2	10		8		10	2	2	1	3	1	11	1	2	1	3	2	3	5	4	3	8
	Lot 24—Poland China.																														
	Barrow 1 and under 2 years.																														
	FIRST PREMIUM NO. 263—SECOND PREMIUM NO. 264—THIRD PREMIUM NO. 265.																														
263	Crown Prince	5	2	5	10	6		3	2	3	3		10	..	10	2	5	1	8	2	3	1	6	1	6	2	11	6	1	4	3
264	Prince Albert 5th	4	7	5	3	5	3	2	10	2	11	.	8	..	10	2	....	1	3	1	10	1	2	1	4	2	6	5	6	3	8
265	Prince Albert 6th	4	..	5	3	5	3	2	9	2	10		8	.	10	2	....	1	4	1	10	1	2	1	4	2	6	5	6	3	11

Table of Measurements, Etc—Continued.

No. of Animal	Class, Lot and Name of Animal	MEASUREMENTS. Length of carcass. Ft	In	Heart girth Ft	In	Flank girth. Ft	In	HEIGHT FROM GROUND. Top line. Should'r Ft	In	Hip Ft	In	Bot. line Fore flank Ft	In	Flank Ft	In	Depth from top line to lower shoulder point Ft.	In.	Thickness through the crop Ft.	In.	Length of back from top of shoulder to loin Ft.	In.	Width across the loins Ft.	In.	Length of quarter from loin to rump Ft.	In.	Depth from loin to hock Ft.	In.	Girth of paunch (middle) Ft.	In.	Girth of throat latch Ft.	In.
	Sow 1 and under 2 years.																														
	FIRST PREMIUM NO. 266.																														
266	Black Rose	4	8	5	6	5	6	2	11	3	1	.	9	.	10	2	1	1	4	2	1	1	4	1	6	2	8	5	10	3	9
	Sow under 1 year.																														
	FIRST PREMIUM NO. 267—SECOND PREMIUM NO. 268.																														
267	Oxford Rose	4	1	4	6	4	4	2	6	2	9	..	9	..	10	1	10	1	2	1	8	1	...	1	3	2	4	4	9	3	5
268	Augusta 7th	3	11	4	5	4	4	2	5	2	6	..	7	..	8	1	11	1	1	1	9	1	....	1	2	2	1	4	9	3	4
	Lot 25—Chester White.																														
	Barrow 1 and under 2 years.																														
	FIRST PREMIUM NO. 269.																														
269	Jim	4	4	5	2	5	.	2	8	2	11	.	8	..	10	2	....	1	3	1	9	1	2	1	4	2	5	5	2	3	5
	Sow 1 and under 2 years.																														
	FIRST PREMIUM NO. 270.																														
270	Beauty	3	10	4	3	4	5	2	3	2	5	..	6	..	5	1	11	1	3	1	9	1	1	1	...	2	1	4	7	3	3
	Sow under 1 year.																														
	FIRST PREMIUM NO. 271.																														
271	Pet	3	10	4	3	4	5	2	5	2	6	..	7	..	9	1	6	1	3	1	9	1	....	1	1	2	3	4	8	3	2
272	Jane	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Lot 26—Essex.

Barrow under 1 year.

FIRST PREMIUM NO. 273—SECOND PREMIUM NO. 275
THIRD PREMIUM NO. 274.

273	Walter	3	2	3	9	3	7	2		2	3	8	8	1	5	1		1	6	1	2	1		1	9	4		2	10
274	Major																												
275	Willson	3	5	4		8	11	2	2	2	5	8	9	1	7	1	2	1	4	1	1	1	1	1	11	4	4	2	11

Sow 1 and under 2 years.

FIRST PREMIUM NO. 277—SECOND PREMIUM NO. 276.

276	Brunette	4	1	4	8	4	7	2	7	2	8	8	10	1	11	1	4	1	6	1	3	1	4	2	1	4	11	3	5
277	Sarah	3	10	5	1	5		2	7	2	8	6	7	1	7	1	5	1	7	1	2	1	1	2	3	5	4	3	6

Sow under 1 year.

FIRST PREMIUM NO. 279—SECOND PREMIUM NO. 280
THIRD PREMIUM NO. 278.

278	Belle	3	8	3	9	4		2	3	2	5	8	9	1	6	1	1	1	5	1		1	1	1	11	4	4	2	9
279	Mary	3	6	3	8	3	9	2	2	2	4	9	10	1	4	1	2	1	7	1		1	2	1	11	4	2	2	8
280	Belle																												

Lot 27—Grades or Crosses.

Barrow 1 and under 2 years.

FIRST PREMIUM NO. 281.

281	Ben	4	3	4	11	4	11	2	6	2	8	7	7	1	10	1	5	1	10	1	2	1	1	2	2	5	1	3	8

Barrow under 1 year.

FIRST PREMIUM NO. 282—SECOND PREMIUM NO. 283.

282	Duke	4	2	4	4	4	5	2	5	2		8	8	1	11	1	2	1	8	1	1	1	2	2		4	10	2	8
283	Hector	4	1	4	6	4	4	2	6	2	7	8	8	1	9	1	3	1	9	1	1	1	3	2	3	8	8	3	3

Sow 1 and under 2 years.

FIRST PREMIUM NO. 284—SECOND PREMIUM NO. 285.

284	Queen Victoria	4	7	5	8	5	2	2	11	3		9	9	2	3	1	5	2		1	3	1	4	2	6	5	6	3	11
285	Fanny Field	4	8	5		4	11	2	9	2	10	7	8	2	2	1	5	1	10	1	4	1	5	2	4	5	1	4	

Table of Measurements, Etc—Continued.

No. of Animal	Class, Lot and Name of Animal.	Measurements. Length of carcass Ft	Length of carcass In	Heart girth Ft	Heart girth In	Flank girth Ft	Flank girth In	Height from Ground. Top line. Should'r Ft	Should'r In	Hip Ft	Hip In	Bot line. Fore flank Ft	Fore flank In	Flank Ft	Flank In	Depth from top line to lower shoulder point Ft.	In.	Thickness through the crop Ft	In.	Length of back from top of shoulder to loin Ft.	In.	Width across the loins Ft.	In.	Length of quarter from loin to rump Ft	In.	Depth from loin to hook Ft.	In.	Girth of paunch (middle) Ft.	In.	Girth of throat latch Ft.	In.
	Sow under 1 year.																														
	FIRST PREMIUM NO. 287—SECOND PREMIUM NO. 286. THIRD PREMIUM NO. 289.																														
286	Duchess	4	1	4	7	4	8	2	7	2	9		10		11	1	11	1	4	1	9	1	3	1	4	2	2	4	10	3	6
287	White Lady	4	3	4	9	4	5	2	6	2	5		8		8	1	10	1	3	1	10	1	1	1	2	2	...	4	11	3	5
288	Topsey																														
289	Nellie	3	8	4	5	4	5	2	4	2	7	..	8		9	1	8	1	3	1	7	1	2	1	2	2	1	4	9	3	....
	Lot 28—Sweepstakes.																														
	Barrow 1 and under 2 years.																														
	PREMIUM NO. 290																														
290	Muskogee	5	1	5	11	5	11	3	.	3	..	.	7	.	8	1	8	2	....	2	3	1	7	1	6	2	9	6	2	4	....
	Lot 30—Heaviest Fat Hog.																														
	PREMIUM No. 293.																														
293	Buster	5	1	5	9	5	11	3	..	3	2	..	8	..	10	2	6	1	9	2	2	1	5	1	7	2	9	6	....	3	

REPORTS OF AWARDING COMMITTEES.

CLASS A—CATTLE.

LOT 1—SHORTHORNS—THOROUGHBRED

Steer 3 and under 4 years

No	Exhibiter	Age in days Nov 4 1881	Weight Nov 4 1880	Average gain per day in pounds since birth	Name of Steer
1	John B Sherman Chicago	1 362	2 200	1 6	Abe Renic
2	John B Sherman, Chicago	1 421	1 930	1 35	Boynton
3	John B Sherman Chicago	1 309	2 150	1 64	Morris .....
	Average	1 364	2 093	1 53	

First premium $30 to steer Morris exhibited by John B Sherman Chicago
Second premium $20 to steer Boynton exhibited by John B Sherman Chicago
Third premium, $10, to steer Abe Renic exhibited by John B Sherman, Chicago

REPORT OF COMMITTEE.

The steers exhibited in this ring were fully ripe for the butcher and had made good average gain per day since birth Evidently they had not had the advantage of pasturage and that exercise so necessary to the best development of all the conditions that ensure handling qualities of the first order They showed every evidence of fine breeding, and good feeding qualities

The first premium steer had the best top bottom and side lines and was well covered with thick, mellow flesh was smaller in bone than his competitors, with a very small, neat head, and short nicely tapering neck This steer Morris was free from bunches of fat, had well proportioned quarters, was nicely developed throughout and would cut to better advantage on the block than the other steers in the ring

The second premium steer was not so even as the one voted the first place, and had not as good top and side lines not so well filled in the round or so evenly fatted but worthy of high commendation as a steer much above the average of good butchers stock

The third premium steer was heavier in shoulder, with thicker neck than the other animals in the ring, fat not as well distributed, and rather heavy in paunch

Steer 2 and under 3 years.

No.	Exhibiter.	Age in days, Nov. 4, 1881.	Weight Nov. 4, 1881.	Average gain per day in pounds, since birth	Name of Steer.
4	Dunlap Bros., Abingdon	1,055	1,855	1 75	Airdrie Boy
5	Dunlap Bros., Abingdon	830	1,485	1.78	Mary Boy
6	John B. Sherman, Chicago	1,078	1,930	1 79	Corporal
7	John B. Sherman, Chicago	928	1,300	1.40	Perfect
8	Morrow & Muir, Clintonville, Ky	1,085	1,895	1 74	Muir
9	H. C. Nelson, Canton	907	1,525	1 68	Belton
10	H. C. Nelson, Canton	862	1,450	1.68	Quid Esset
	Average	963	1,634	1 69	

First premium $30, to steer Muir, exhibited by Morrow & Muir, Clintonville, Ky.
Second premium $20, to steer Airdrie Boy, exhibited by Dunlap Bros., Abingdon.
Third premium $10, to steer Quid Esset, exhibited by H. C. Nelson, Canton.

REPORT OF COMMITTEE.

The seven animals exhibited in this ring, were a grand lot of well bred steers, showing a large average gain per day since birth, and for quality, with few exceptions, were all that could be desired for profitable cutting and as likely to furnish the greatest proportion of choicest cuts to gross weight. Some steers in this ring were unevenly fatted; rather logy, with punchy appearance and in marked contrast with the majority of the animals, which were attractive and much above the average.

The first premium animal was a low, square, blocky fed steer, of fine finish and attractive appearance; fine in bone, with small head, neat neck, well quartered, and nicely proportioned throughout, top, bottom and side lines straight, loin longer and thicker than that of any other steer in the ring, and better filled in the round.

The second premium steer nearly approached the first premium animal in all essential points; was rather coarser in head, with heavier neck and bone; fat not as evenly distributed, nor as well let down in twist.

The third premium animal did not show so good growth as the other two premium steers; was not evenly covered, nor so well filled in the round.

Several other animals in this ring were worthy of special mention and in qua ity but a shade below those to which premiums were awarded.

Cow 3 years old or over.

No.	Exhibitor	Age in days Nov. 4, 1881.	Weight Nov. 4, 1881.	Average gain per day in pounds since birth	Name of Cow.
11	Canada West Farm Stock Association, Brantford, Can.	1,873	1,875	1 00	Lady Aberdeen 3d.
12	J. H. Potts & Son, Jacksonville	2,424	1,865	0 76	Geneva's Pride
13	Nelson Jones, Towanda	2,157	1,785	0 82	Miss Molly Bates 4th
14	H. C. Nelson, Canton	1,981	1,500	0 75	Airdrionne 4th
	Average	2,109	1,756	0 83	

First premium, $30, to cow Lady Aberdeen 3d, exhibited by Canada West Farm Stock Association, Brantford, Canada.

Second premium, $20, to cow Miss Molly Bates 4th, exhibited by Nelson Jones, Towanda.

Third premium, $10, to cow Geneva's Pride, exhibited by J. H. Potts & Son, Jacksonville.

REPORT OF COMMITTEE.

With one exception, the cows in this ring were very superior specimens of the Shorthorn breed.

The first premium animal approached a very high standard of excellence, was nicely proportioned throughout, and thickly covered with mellow meat. The small, neat head, short, nicely tapering neck, straight top, bottom and side lines, fine bone and good handling qualities, gave assurance that this cow would dress a large proportion of excellent meat to gross weight, though she would doubtless have furnished a better quality of meat, and cut to better profit as a butcher's beast, before she reached her present advanced age.

The second premium cow was not so fat as the first premium animal, did not show the superior breeding or handling qualities; was rather more bunchy, and did not have so evenly proportioned quarters; otherwise this cow, Miss Molly Bates 4th, was a very superior specimen of this popular beef breed.

The third premium cow was a very attractive and finely bred animal, but had passed her prime for a choice cutting animal; she was not so well filled in rump as her more successful rivals, and her fore-quarters were proportionately light.

LOT 2—HEREFORDS.

Steer 3 and under 4 years.

No.	Exhibiter.	Age, in days, Nov 4, 1881....	Weight Nov. 4, 1881.	Average gain per day in pounds, since birth.....	Name of Animal.
15	T. L. Miller Co., Beecher	1,224	1,965	1 60	Will............... ...
16	T. L Miller Co., Beecher	1,242	1,930	1 55	Washington ......
	Average.................	1,233	1,947	1 57	

First premium, $30, to steer Will, exhibited by T. L Miller Co., Beecher.
Second premium, $20, to steer Washington, exhibited by T. L. Miller Co., Beecher.

REPORT OF COMMITTEE.

The two steers entered in this ring were finely finished butchers' bullocks, well developed and ripe for the block, were well matched, and had good top and bottom lines; both were good handlers, and gave every evidence of cutting a large proportion of net to gross.

The steer awarded second premium was rather heavier in fore-shoulder in proportion to hind-quarters when compared with the first premium animal; not as well filled in rump, and rather heavier in head and bone than his competitor.

Cow 3 years old or over.

No.	Exhibiter.	Age in days, Nov. 4, 1881.........	Weight Nov. 4, 1881	Average gain per day in pounds, since birth.....	Name of Cow.
17	T. E. Miller, Beecher.........................	2,243	1,560	0.69	Maid of the Mist, 1365
18	T. E. Miller, Beecher.........................	1,326	1,335	1.00	Lady Elliott, 2150....
19	Thomas Clark, Beecher......................	1,777	1,410	0.79	May Queen 2d........
	Average......................................	1,782	1,435	0 82	

First premium, $30, to cow Maid of the Mist, 1365, exhibited by T. E. Miller, Beecher.
Second premium, $20, to cow May Queen 2d, exhibited by Thomas Clark, Beecher.
Third premium, $10, to cow Lady Elliott, 2150, exhibited by T. E. Miller, Beecher.

REPORT OF COMMITTEE.

The cows in this ring were all creditable specimens of their breed, and in good condition for the block.

The first premium animal was the smoothest and most evenly-fatted cow in the ring; well covered with thick, mellow flesh, with better proportioned quarters than her rivals. The cow, Maid of the Mist, 1365, had a neat head; short, nicely proportioned neck; good top, bottom and side lines; was well filled down to hock and gambriel joint, and well let down in twist.

The second premium cow was rather heavier in shoulder and brisket, with fat not as well distributed, or filled in round as the first premium cow. This cow would not cut to so good advantage or furnish the butcher and consumer so fine a quality of meat as the animal given the first place.

The third premium cow was patchy, with rather heavy fore-quarters in proportion to hind-quarters, bad top line, and not well filled in rump.

LOT 3—DEVONS.

Steer 3 and under 4 years.

No.	Exhibiter.	Age in days, Nov 4, 1881	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Steer.
20	L Rawson, Oak Creek, Wis	1,328	1,230	0 92	Buck
21	L. Rawson, Oak Creek, Wis	1,268	1,075	0 84	Broad
	Average	1,298	1,152	0 88	

First premium, $30 to steer Broad, exhibited by L Rawson, Oak Creek, Wis.
Second premium, $20, to steer Buck, exhibited by L Rawson, Oak Creek, Wis

REPORT OF COMMITTEE.

The steers in this ring were evenly fatted, but could have been much improved by continued liberal feeding, and were not in condition to make favorable comparison with the former rings passed upon by the committee, taking into consideration the slow maturity of the Devon breed of cattle

The steer awarded the first premium was better in the loin and rib, with better handling qualities, and would dress a larger proportion of net to gross than the steer awarded second premium.

Steer 2 and under 3 years.

No	Exhibiter.	Age in days, Nov 4, 1881.	Weight Nov. 4, 1881	Average gain per day in pounds, since birth	Name of Steer.
22	L. Rawson, Oak Creek Wis	882	1,030	1 16	Tom
23	L. Rawson, Oak Creek, Wis	969	975	1 00	Jerry
24	L. Rawson, Oak Creek, Wis	928	925	0.99	John
	Average	926	977	1 05	

First premium, $30, to steer Jerry, exhibited by L Rawson, Oak Creek, Wis
Second premium, $20, to steer Tom, exhibited by L. Rawson, Oak Creek, Wis.
Third premium, $10, to steer John, exhibited by L. Rawson, Oak Creek, Wis.

This ring was filled with a smooth, even lot of medium well fatted Devon cattle, which, considering age, showed a fair average gain per day.

The first premium animal was well proportioned throughout, well filled in round, and the best fatted of the three.

The second premium steer greatly resembled the one given first place, but was hardly so well filled in loin and round, and rather thin in flesh for a prime butcher's bullock.

The third premium steer had not made as good growth as the others, was rather coarser in head and neck than his rivals.

Steer 1 and under 2 years.

No.	Exhibitor.	Age in days, Nov. 4, 181	Weight Nov. 4, 1881	Average gain per day in pounds, since birth	Name of Steer.
25	L. Rawson Oak Creek, Wis	614	850	1 38	Bill
•26	L. Rawson, Oak Creek, Wis	614	835	1 36	Jim
27	L. Rawson, Oak Creek, Wis	600	690	1 15	Max
	Average	609	792	1 30	

First premium, $30, to steer Jim exhibited by L. Rawson, Oak Creek, Wis.
Second premium, $20, to steer Bill, exhibited by L. Rawson, Oak Creek, Wis.
Third premium, $10, to steer Max, exhibited by L. Rawson, Oak Creek, Wis.

REPORT OF COMMITTEE.

The yearling cattle entered in this ring, considering the slow development of this breed, had made much more than the average growth of Devon cattle, but all needed years of liberal feeding to make them profitable steers for feeder, butcher and consumer.

The first premium steer had the smallest head, shortest and thinnest neck, with best top, bottom and side lines, and more evenly proportioned quarters, was shorter in leg, finer in bone, and more thickly meated than the other animals in the ring.

The second premium steer was not so well filled in rump, so good in loin, so fat, nor so fine a handler as the first premium steer.

Third premium steer was not so well proportioned as the other two.

LOT 5—GRADES OR CROSSES.

Steer 3 and under 4 years.

No	Exhibitor	Age in days, Nov. 4 1881.	Weight Nov. 4, 1881	Average gain per day in pounds, since birth	Name of Steer.	Breed
28	J. D. Gillett, Elkhart	1,329	2,100	1 58	McCue	Grade Shorthorn
29	J. D. Gillett, Elkhart	1,268	2,015	1 58	Pell	" "
30	J. D. Gillett, Elkhart	1,268	2,140	1 68	Read	" "
31	J. D. Gillett, Elkhart	1,237	2,095	1 69	McMullen	" "
32	J. D. Gillett, Elkhart	1,237	2,010	1 62	Blood	" "
33	J. D. Gillett, Elkhart	1,357	1,900	1 40	Blackstone	" "
34	J. D. Gillett, Elkhart	1,268	1,995	1 57	Barney	" "
35	J. D. Gillett, Elkhart	1,176	2,130	1 81	Phil Sheridan	" "
36	C. M. Culbertson, Chicago	1,29[illegible]	1,835	1 42	Broadhorns	Grade Hereford.
37	T. W. Hunt, Ashton	1,290	2,050	1 58	Red Chub	Grade Shorthorn
38	T. W. Hunt, Ashton	1,362	1,895	1 39	Pickrell	" "
39	T. W. Hunt, Ashton	1,287	1,940	1 50	Sam Noe	" "
40	T. W. Hunt, Ashton	1,217	2,015	1 65	Increase	" "
41	John B Sherman, Chicago	1,298	1,825	1,40	Beveridge	" "
42	T. L. Miller Co., Beecher	1,145	1,700	1 48	Tom Brown	Grade Hereford.
43	T. L. Miller Co., Beecher	1,190	2,145	1 80	Conqueror	" "

Steer 3 and under 4 years—Continued.

No.	Exhibitor.	Age, in days, Nov. 4, 1881	Weight Nov. 4, 1881..........	Average gain per day, in pounds, since birth	Name of Steer.	Breed.
44	T. L. Miller Co., Beecher	1,135	1,550	1 36	Oxford	Grade Hereford..
45	T. L. Miller Co., Beecher .	1,190	2,035	1.71	Bachelor	" "
46	Amos F. Moore, Polo . ..	1,298	2,185	1.68	Hawks............	Grade Shorthorn
47	Morrow & Muir, Clint'nv.,Ky	1,284	1,910	1 48	Cunningham ...	" "
48	Morrow & Muir, Clint'nv.,Ky	1,324	2,085	1 57	Talbott..	" "
49	Morrow & Muir, Clint'nv.,Ky	1,105	1,855	1.67	Frosty	" "
50	Morrow & Muir, Clint'nv.,Ky	1,319	1,870	1 41	Dick	" "
51	Morrow & Muir, Clint'nv.,Ky	1,282	1,900	1 48	Tom	" "
52	Morrow & Muir, Clint'nv.,Ky	1,298	1,855	1 42	Lunce	" "
53	Morrow & Muir, Clint'nv.,Ky	1,303	2,010	1 54	Sampson...	" "
54	Morrow & Muir, Clint'nv.,Ky	1,282	1,815	1 41	Clay	" "
55	Morrow & Muir, Clint'nv.,Ky	1,251	1,990	1 59	Bush	" "
56	Morrow & Muir, Clint'nv.,Ky	1,293	2,065	1 59	Lem...............	" "
57	J. D. Gillett, Elkhart.........	1,329	1,965	1 47	Cloud	" "
58	H. C. Nelson, Canton	1,156	1,625	1 40	Short Sir	" "
59	H. C. Nelson, Canton	1,237	1,880	1 51	Quid si nam	" "
60	H. C. Nelson, Canton	1,234	1,775	1 43	Quid	" "
61	J. D. Gillett, Elkhart	1,268	1,910	1 50	Downhorn	" "
	Average	1,259	1,943	1,54		

First premium, $30, to steer Conqueror, exhibited by T. L. Miller Co., Beecher.
Second premium, $20, to steer Talbott, exhibited by Morrow & Muir, Clintonville, Ky.
Third premium, $10, to steer Barney, exhibited by J. D. Gillett, Elkhart.

REPORT OF COMMITTEE.

Thirty-four steers of great excellence were shown in this ring. The condition of the animals indicated the difference in care and treatment received by the several herds represented. Some of the cattle had been stabled and well groomed, but deprived of the exercise requisite for the most vigorous and healthy development, while the lively, healthy coat and superior handling qualities of the steers that had not been confined or restricted in freedom of range or natural conditions was noticeable. These cattle, with few exceptions, were well bred, and evinced much skill on the part of the feeder.

The leading beef breeds were represented in their respective crosses, and choice specimens of the different types of the various families of beef cattle were brought into competition in this ring. The low, blocky, thick-meated steer and the short, compact, heavy quartered and well topped steers greatly outnumbered the rangy, thinly-covered animals.

The first ballot resulted in a tie vote, each of the following steers receiving one vote

Grade Shorthorn steer Barney.
Grade Hereford steer Conqueror.
Grade Shorthorn steer Talbott.

These three steers were so evenly mated in all points of excellence for a prime butcher's beast as to require the addition of six committeemen, as vote after vote was taken before a decision could be reached.

The second premium steer was hardly as well filled in the twist, or as well flanked as the steer awarded first premium.

The third premium steer was not so smooth, and would not cut to so great profit, as the other premium animals, owing to the large proportion of fat to lean.

Steer 2 and under 3 years.

No.	Exhibiter.	Age in days, Nov. 4, 1881	Weight Nov. 4, 1881	Average gain per day, in lbs., since birth	Name of Steer.	Breed.
62	J. D. Gillett, Elkhart	872	1,845	2 11	John Sherman.	Grade Shorthorn
63	J. D. Gillett, Elkhart	964	1,940	2.01	Cherry	" "
64	J. D. Gillett, Elkhart	964	1,755	1 82	Oakley	" "
65	J. D. Gillett, Elkhart	992	1,685	1 69	Clincher	" "
66	J. D. Gillett, Elkhart	780	1,635	2 09	Chance	" "
67	J. D. Gillett, Elkhart	992	1,770	1 78	Cash	" "
68	J. D. Gillett, Elkhart	903	1,580	1 74	Garfield	" "
69	J. D. Gillett, Elkhart	903	1,580	1 74	Arthur	" "
70	J. D. Gillett, Elkhart	903	1,515	1 67	Storm	" "
71	J. D. Gillett, Elkhart	811	1,605	1 97	Chub	" "
72	J. D. Gillett, Elkhart	872	1,935	2 21	Wild Bill	" "
73	C. M. Culbertson, Chicago	1,056	1,715	1 62	Right	Grade Hereford.
74	C. M. Culbertson, Chicago	1,056	1,675	1 58	Left	" "
75	C. M. Culbertson, Chicago	1,059	1,485	1 42	Spot Face	" "
76	T. W. Hunt, Ashton	1,066	1,755	1 61	Royal Charmer	Grade Shorthorn
77	T. W. Hunt, Ashton	1,045	1,765	1 68	Red Lord	" "
78	T. W. Hunt, Ashton	920	1,760	1 91	Thad. Stevens	" "
79	T. W. Hunt, Ashton	872	1,505	1 72	Baron	" "
80	T. W. Hunt, Ashton	1,028	1,855	1 80	Sensation	" "
81	David Grant, Petersburg	1,052	1,900	1 80	John Bull	" "
82	David Grant, Petersburg	880	1,500	1 70	Echerd	" "
83	D. W. Smith, Bates	947	1,710	1 80	Col. Mills	" "
84	John B. Sherman, Chicago	926	1,630	1 75	Cherub	" "
85	T. S. Miller Co., Beecher	1,054	1,925	1 82	Kansas	Grade Hereford.
86	G S. Burleigh, Mechanicsv.	1,065	1,675	1 57	Ab. Pratt	Heref'd & Sh'th'n
87	H. C. Nelson, Canton Ia	964	1,600	1 65	Quid Sit	Grade Shorthorn
88	H. C. Nelson, Canton	890	1,420	1.59	Si Quid	" "
89	H. C. Nelson, Canton	954	1,460	1 53	Quid Nunc	" "
90	H. C. Nelson, Canton	1,044	1,525	1 46	Quid Nam	" "
91	H. C. Nelson, Canton	899	1,375	1 52	Nam Si	" "
92	H. C. Nelson, Canton	893	1,440	1 61	Si Nam	" "
93	H. C. Nelson, Canton	1,032	1,550	1 50	Nam Quid	" "
94	H. C. Nelson, Canton	900	1,405	1 56	Slow Go	" "
	Average	955	1,625	1 70		

First premium, $30, to steer Red Lord, exhibited by T. W. Hunt, Ashton.
Second premium, $20, to steer Oakley, exhibited by J. D. Gillett, Elkhart.
Third premium, $10, to steer Kansas, exhibited by T. L. Miller Co., Beecher.

REPORT OF COMMITTEE.

Twenty-one of the thirty-three steers entered were brought into competition, and were mainly high grade Herefords and Shorthorns, and showed good development for their age.

As a lot, the steers were of that approved model most profitable for the butcher—low, blocky, compact, and thick-meated; fine in head and bone; well-meated down to hock and gambriel joint, with well packed back, and good in twist.

The steers were well fatted, and had made remarkable growth. The handling qualities indicated a superior lot of prime butcher's bullocks, profitable for the dealer, and likely to furnish the consumer with the most desirable quality of meat.

The first premium steer was better filled in the loin and round, with fat more evenly distributed, and would cut a much larger proportion of lean meat to gross weight than his rivals.

The second premium steer was very evenly mated with the first premium animal, but slightly coarser in head, with rump not so well filled.

The third premium steer was hardly so well proportioned as the other premium animals; had rather heavier forequarters, and was coarser in head and horn, but otherwise the equal of his more successful rivals.

Steer 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 4, 1881.	Weight Nov. 4, 1881.......	Average gain per day, in pounds, since birth.....	Name of Steer.	Breed.
95	C. M. Culbertson, Chicago	685	1,025	1 49	Curly	Grade Hereford..
96	T. W. Hunt, Ashton	620	1,250	2 01	Geo. Washington	Grade Shorthorn
97	J. H. Potts & Son, Jack'ville	719	1,565	2 17	Major.	" "
98	Cobb & Phillips, Kankakee	680	1,320	1 94	Red Acomb	" "
99	G. S. Burleigh, Mechanicsv., Ia.	622	1,280	2 05	Bailey	Grade Hereford..
	Average	665	1,288	1 93		

First premium, $30, to steer Major, exhibited by J. H. Potts & Son, Jacksonville.
Second premium, $20, to steer Geo. Washington, exhibited by T. W. Hunt, Ashton.
Third premium, $10, to steer Bailey, exhibited by G. S. Burleigh, Mechanicsville, Ia.

REPORT OF COMMITTEE.

The five yearling steers entered in this ring had made a very thrifty growth, without that forcing process which develops an undue proportion of fat to lean.

The first premium steer was a remarkably handsome, finely bred and well proportioned animal, and, considering age, was well matured. He could only be improved, from a butcher's standpoint, by continued liberal feeding and skillful handling most likely to insure the proper development of lean to fat. He was nicely proportioned throughout, with small, neat head, short, thin and nicely tapering neck, and medium fine in bone, with straight top and bottom lines, and, for a yearling, thickly covered with mellow, firm meat.

The second premium steer was but a shade inferior in any particular, but was not as well developed, for age, as the animal awarded first honor.

The third premium steer was not as nicely proportioned as the other premium animals; had heavy brisket, uneven top line, and was not well filled in rump.

Cow 3 years old or over.

No.	Exhibiter.	Age in days, Nov. 4, 1881........	Weight Nov. 4, 1881.......	Average gain per day, in pounds, since birth.....	Name of Cow	Breed.
100	J. D. Gillett, Elkhart	1,268	1,520	1 19	Lady Peerless .	Grade Shorthorn
101	C. M. Culbertson, Chicago..	2,059	1,925	0 93	Beefy Back.......	Grade Hereford .
	Average.................	1,663	1,722	1 06		

First premium, $30, to cow Lady Peerless, exhibited by J. D. Gillett, Elkhart.
Second premium, $20, to Beefy Back, exhibited by C. M. Culbertson, Chicago.

REPORT OF COMMITTEE.

The barren grade Shorthorn cow awarded the first premium was a superior specimen of a profitable butcher's beast, and gave every indication of cutting an unusually large proportion of choice cuts.

This cow had a small, neat head; short, thin, nicely tapering neck; straight top, bottom and side lines; was fine in bone; evenly fatted; well let down in twist; well proportioned throughout, and mounted on short legs.

The grade Hereford cow was over-ripe, rather patchy, and would not cut to as good profit as the first premium cow.

LOT 6—SWEEPSTAKES RINGS.

Steer 3 and under 4 years.

No.	Exhibiter.	Age, in days, Nov. 4, 1884	Weight Nov. 4, 1884	Average gain per day, in pounds, since birth	Name of Steer.	Breed.
47	Morrow & Muir, Clint'nv.,Ky	1,284	1,910	1.48	Cunningham ...	Grade Shorthorn
48	Morrow & Muir, Clint'nv.,Ky	1,324	2,085	1.57	Talbott	" "
52	Morrow & Muir, Clint'nv.,Ky	1,298	1,855	1.42	Lunce	" "
53	Morrow & Muir, Clint'nv.,Ky	1,303	2,010	1.54	Sampson	" "
54	Morrow & Muir, Clint'nv.,Ky	1,282	1,815	1.41	Clay	" "
51	Morrow & Muir, Clint'nv.,Ky	1,282	1,900	1.48	Tom	" "
34	J. D. Gillett, Elkhart	1,268	1,995	1.57	Barney	" "
29	J. D. Gillett, Elkhart	1,268	2,015	1.58	Pell	" "
57	J. D. Gillett, Elkhart	1,329	1,965	1.47	Cloud	" "
33	J. D. Gillett, Elkhart	1,357	1,900	1.40	Blackstone	" "
30	J. D. Gillett, Elkhart	1,268	2,140	1.68	Read	" "
32	J. D. Gillett, Elkhart	1,237	2,010	1.62	Blood	" "
31	J. D. Gillett, Elkhart... ...	1,237	2,095	1.69	McMullen	" "
37	T. W. Hunt, Ashton	1,290	2,050	1.58	Red Chub	" "
40	T. W. Hunt, Ashton	1,217	2,015	1.65	Increase	" "
46	Amos F. Moore, Polo	1,298	2,185	1.68	Hawks...	" "
41	John B. Sherman, Chicago	1,298	1,825	1.40	Beveridge.	" "
59	H. C. Nelson, Canton	1,237	1,880	1.51	Quid Si Nam ...	" "
60	H. C. Nelson, Canton... ...	1,234	1,775	1.43	Quid	" "
36	C. M. Culbertson, Chicago	1,291	1,835	1.42	Broad Horns....	Grade Hereford .
15	T. L. Miller Co., Beecher . .	1,224	1,965	1.60	Will	Hereford ... ...
45	T. L. Miller Co., Beecher....	1,190	2,035	1.71	Bachelor	Grade Hereford..
16	T. L. Miller Co., Beecher....	1,242	1,930	1.55	Washington	Hereford ... .
42	T. L. Miller Co., Beecher .	1,145	1,700	1.48	Tom Brown......	Grade Hereford.
43	T. L. Miller Co., Beecher....	1,190	2,145	1.80	Conqueror	" "
	Average	1,263	1,961	1.55		

Sweepstakes premium, $50, to steer McMullen, exhibited by J. D. Gillett, Elkhart.

REPORT OF COMMITTEE.

The steers exhibited in this ring, with few exceptions, were too fat to cut to the best advantage, and some were much past their prime for furnishing a desirable quality of meat.

The steer awarded sweepstakes premium was a good handler, and gave every indication of having enjoyed sufficient exercise and other favorable natural conditions to develop a due proportion of lean meat. He had not matured as rapidly as some other steers in the ring, but was more evenly covered with thick, mellow, firm meat of the most desirable quality for the consumer.

This steer was the smoothest animal in the ring; had the best loin and rib, smallest brisket in proportion to weight, straight and even top, bottom and side lines, and was well filled in twist; had a small head, short, neat neck, was well filled in shoulder, and carried a very large proportion of choice cuts; and, with the exception of being rather leggy and slightly deficient in second thigh, there was but little room for improvement in all that goes to make a profitable butcher's bullock.

Steers 2 and under 3 years.

No.	Exhibiter.	Age in days, Nov. 4, 1881	Weight Nov. 4, 1881.	Average gain per day, in pounds, since birth	Name of Steer.	Breed.
64	J. D. Gillett, Elkhart	964	1,755	1.82	Oakley	Grade Shorthorn
65	J. D. Gillett, Elkhart........	992	1,685	1 69	Clincher..........	" "
67	J. D. Gillett, Elkhart	992	1,770	1.78	Cash	" "
72	J. D. Gillett, Elkhart	872	1,985	2 21	Wild Bill	" "
73	C. M. Culbertson Chicago	1,056	1,715	1 62	Right	Grade Hereford..
74	C. M Culbertson, Chicago	1,056	1,675	1 58	Left	" "
75	C. M. Culbertson, Chicago.	1,039	1,485	1 42	Spot Face	" "
76	T. W. Hunt, Ashton	1,066	1,755	1 64	Royal Charmer	Grade Shorthorn
77	T. W. Hunt, Ashton	1,045	1,765	1 68	Red Lord	" "
78	T. W. Hunt, Ashton.... ..	920	1,760	1 91	Thad. Stevens...	" "
79	T W. Hunt, Ashton	872	1,505	1 72	Baron	" "
80	T. W. Hunt, Ashton	1,028	1,855	1 80	Sensation.... ...	" "
81	David Grant, Petersburg	1,052	1,900	1 80	John Bull	" "
82	David Grant, Petersburg .	880	1,500	1 70	Echerd	" "
4	Dunlap Bros., Abingdon ..	1,055	1,855	1 76	Airdrie Boy	Shorthorn.......
5	Dunlap Bros., Abingdon [Ia.	830	1,485	1 78	Mary Boy	" ....
86	G.S. Burleigh, Mechanicsv.,	1,065	1,675	1 57	Ab. Pratt	Hereford & Sh'n.
8	Morrow & Muir, Clintonv.,	1,085	1,895	1 74	Muir	Shorthorn........
83	D. W. Smith, Bates .. [Ky.	947	1,710	1 80	Col. Mills	Grade Shorthorn
6	John B. Sherman, Chicago.	1,078	1,930	1 79	Corporal	Shorthorn........
22	L. Rawson, Oak Creek, Wis.	882	1,030	1.16	Tom	Devon ....
85	T. L. Miller Co., Beecher .	1,054	1,925	1 82	Kansas	Grade Hereford.
87	H. C. Nelson, Canton	964	1,600	1 65	Quid Sit..........	Grade Shorthorn
10	H. C. Nelson, Canton	862	1,450	1 68	Quid Esset.......	Shorthorn........
9	H. C. Nelson, Canton	907	1,525	1 68	Belton	" ....
89	H. C. Nelson, Canton	954	1,460	1 53	Quid Nunc	Grade Shorthorn
93	H. C. Nelson, Canton	1,032	1,550	1 50	Nam Quid	" "
	Average...	983	1,672	1 70		

Sweepstakes premium, $50, to steer Echerd, exhibited by David Grant, Petersburg.

REPORT OF COMMITTEE.

The eighteen head of steers entered in this ring were uniform in size, and in color as follows. Red, thirteen; roan, three; white, two.

The first ballot resulted in a tie vote, each of the five committeemen voting for as many different animals.

The addition of several committeemen resulted in the selection of a very superior grade Shorthorn roan steer for the first honor.

This steer, considering his size, was the finest in bone, had the straighest top, bottom and side lines, and would cut the greatest proportion of prime meat, to gross, of any of his competitors.

This steer was well covered with thick mellow meat, of prime quality; was well proportioned throughout, with small, neat head, and short, thin neck.

The superior quality and quantity of desirable cuts in this steer made him a profitable animal for the butcher and consumer.

Short Horn Cow, Lady Aberdeen 3d, exhibited by Canada West Farm Stock Ass'n, Brantford, Can. Awarded Sweeptakes Prem., Fat Stock Show, 1881.—p 137

Steer 1 and under 2 years

No.	Exhibiter.	Age, in days, Nov. 4, 1881	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Steer.	Breed.
95	C. M. Culbertson, Chicago	685	1,025	1.49	Curley	Grade Hereford.
96	T. W. Hunt, Ashton. [ville.	620	1,250	2 01	Geo. Washington	Grade Shorthorn
97	J. H. Potts & Son, Jackson-	719	1,565	2.17	Major	" "
98	Cobb & Phillips, Kankakee.	679	1,320	1 94	Red Acomb	" "
26	L. Rawson, Oak Creek, Wis.	614	835	1.36	Jim	Devon
99	G. S. Burleigh, Mechanicsv., [Ia.	622	1,280	2 05	Bailey	Grade Hereford.
	Average	656	1,212	1.84		

Sweepstakes premium, $50, to steer Major, exhibited by J. H. Potts & Son, Jacksonville.

REPORT OF COMMITTEE.

The ring was composed of one Devon, two Grade Hereford, and three Grade Shorthorn steers. All the animals were creditable specimens of the several breeds represented.

The best animal in the ring was a roan Grade Shorthorn steer, of fine finish and well matured for age, with small head; short, thin neck, medium fine bone, and good handling qualities; flesh thick and mellow.

This steer, considering age, was well topped, and the long thick loin and square rump, straight top and bottom lines, indicated a very profitable carcass for the block, and meat of superior quality. The lower line was very good, brisket small, well filled in the twist, and flanked low down.

The other steers were heavier in bone and forequarter, and not as well developed for age.

Cow 3 years old or over.

No.	Exhibiter.	Age in days, Nov. 4, 1881	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Cow.	Breed.
100	J. D. Gillett, Elkhart	1,268	1,520	1 19	Lady Peerless	Grade Shorthorn
101	C. M. Culbertson, Chicago	2,059	1,925	0.93	Beefy Back	Grade Hereford.
11	Canada West Farm Stock Associa'n, Brantford, Can.	1,873	1,875	1 00	Lady Aberdeen [3d.	Shorthorn
12	J. H. Potts & Son, Jackson-	2,424	1,865	0 76	Geneva's Pride	"
17	T. E. Miller, Beecher..[ville	2,243	1,560	0 69	Maid of the Mist	Hereford
18	T. E. Miller, Beecher	1,326	1,335	1 00	Lady Elliott, 2150.	"
19	Thomas Clark, Beecher	1,777	1,410	0.79	May Queen 2d	"
13	Nelson Jones, Towanda	2,157	1,785	0 82	Miss Molly Bates [4th	Shorthorn
	Average	1,891	1,659	0 89		

Sweepstakes premium, $50, to cow Lady Aberdeen 3d, exhibited by Canada West Farm Stock Association, Brantford, Canada.

REPORT OF COMMITTEE.

The sweepstakes premium for the best cow of any age or breed in the show was awarded to a roan Shorthorn cow, nicely proportioned throughout, with good top, bottom and side lines; small, neat head; short, nicely tapering neck; long, broad and straight back; deep loin, of good length; well proportioned quarters, and fine in bone. The cow was rather too fat to cut to the greatest profit, but in many respects was a model cow, covered with a superior quality of thick, mellow meat, suited to the wants of critical consumers. This cow was a non-breeder, having had but one calf, when four years old.

LOT 7—GRAND SWEEPSTAKES.

Open to all.

Best Steer or Cow in the Show.

Premium, $100, awarded to steer McMullen, exhibited by J. D. Gillett, Elkhart.

REPORT OF COMMITTEE.

The grand honor of the show was awarded to a red Grade Shorthorn steer, 3 and under 4 years of age.

The handling qualities could hardly be improved, and with the exception of a little too much length of limb—which, to the superficial observer, might give the impression that the animal was not well filled in the twist, there was but little room for criticism or improvement.

The steer was well proportioned throughout, and had a grand good back and loin.

This steer was awarded the sweepstakes premium as the best three-year-old steer in the show, and is minutely described in the report of the committee passing on sweepstakes rings.

LOT 8—CAR LOADS.

Cattle 3 and under 4 years.

Car Load No. 1.

No.	Exhibiter.	Age, in days, Nov 4, 1881..........	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
28	J. D. Gillett, Elkhart.......	1,329	2,100	1.58	McCue	Grade Shorthorn
29	J. D. Gillett, Elkhart...	1,268	2,015	1 58	Pell	" "
30	J. D. Gillett, Elkhart... ...	1,268	2,140	1.68	Read......... ...	" "
31	J. D. Gillett, Elkhart... ...	1,237	2,095	1.69	McMullen	" "
32	J. D. Gillett, Elkhart........	1,237	2,010	1 62	Blood	" "
33	J. D. Gillett, Elkhart...	1,357	1,900	1 40	Blackstone.......	" "
34	J. D. Gillett, Elkhart... ...	1,268	1,995	1 57	Barley	" "
35	J. D. Gillett, Elkhart.......	1,176	2,130	1.81	Phil Sheridan...	" "
	Average	1,267	2,048	1 61		

Car Load No. 2.

107	J. D. Gillett, Elkhart........	1,329	1,885	1.48	Snow	Grade Shorthorn
108	J. D. Gillett, Elkhart...	1,329	1,930	1.45	Milk	" "
109	J. D. Gillett, Elkhart........	1,329	2,105	1.58	White Lad	" "
110	J. D. Gillett, Elkhart... ...	1,329	2,045	1 53	Norway	" "
111	J. D. Gillett, Elkhart.......	1,268	2,050	1 61	White Feather...	" "
112	J. D. Gillett, Elkhart... ...	1,268	1,740	1 37	Arctic	" "
113	J. G. Gillett, Elkhart... ...	1,237	2,075	1 67	White Cream ...	" "
114	J. D. Gillett, Elkhart.......	1,237	1,825	1 48	Downy	" "
	Average	1,291	1,957	1 52		

CAR LOAD No. 3.

No.	Exhibiter.	Age, in days, Nov. 4, 1881........	Weight Nov. 4, 1881..	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
1	John B. Sherman, Chicago	1,362	2,200	1 61	Abe Renick	Shorthorn.......
2	John B. Sherman, Chicago	1,421	1,930	1 35	Boynton....	" ... ...
3	John B. Sherman, Chicago	1,309	2,150	1.64	Morris	" .... ..
115	John B. Sherman, Chicago.	1,266	2,055	1 62	Belmont	" ... ...
116	John B. Sherman, Chicago	1,237	2,000	1 61	Jim Blaine	Grade Shorthorn
117	John B. Sherman, Chicago	1,298	1,890	1 45	Frank.	" "
118	John B. Sherman, Chicago.	1,131	1,835	1 62	Robin Hood.....	Shorthorn... ....
41	John B. Sherman, Chicago	1,298	1,825	1 40	Beveridge... ...	Grade Shorthorn
	Average	1,290	1,985	1 54		

CAR LOAD No. 4

47	Morrow & Muir, Clint'nv.,Ky	1,284	1,910	1 48	Cunningham....	Grade Shorthorn
48	Morrow & Muir, Clint'nv.,Kv	1,324	2,085	1 57	Talbott	" "
52	Morrow & Muir, Clint'nv.,Ky	1,298	1,855	1 42	Lunce	" "
54	Morrow & Muir, Clint'nv .Ky	1,282	1,815	1 41	Clay	" "
55	Morrow & Muir, Clint'nv.,Ky	1,251	1,990	1 59	Bush.............	" "
49	Morrow & Muir, Clint'nv.,Ky	1,105	1,855	1 67	Frosty	" "
51	Morrow & Muir, Clint'nv .Ky	1,282	1,900	1 48	Tom	" "
53	Morrow & Muir, Clint'nv.,Ky	1,303	2,010	1 54	Sampson	" "
	Averago	1,266	1,925	1.52		

First premium, $150, to car load No. 1, exhibited br J. D. Gillett, Elkhart.

Second premium, $75, to car load No. 4, exhibited by Morrow & Muir, Clintonville, Ky.

REPORT OF COMMITTEE.

The first premium was awarded to a car load of high-grade Shorthorn steers showing the largest average gain per day, and a uniformity of type and superior quality seldom excelled.

The steers were low and blocky in form, fine in bone, thickly covered with firm, mellow flesh, and well proportioned throughout.

The second premium car load of cattle very nearly approached the high standard of excellence of the lot awarded the first premium, and a critical examination was necessary to determine the matter.

This lot of cattle were not as uniform in form, and were mounted on long legs, which made the animals appear more rangy than the first premium lot.

The second premium lot of cattle reflected great credit upon the breeder and feeder. For profit on the block this lot was much above the average of first-class butchers' stock.

Cattle 2 and under 3 years.

CAR LOAD NO. 1.

No.	Exhibiter.	Age in days, Nov. 4, 1881.........	Weight, Nov. 4, 1881........	Average gain per day in pounds, since birth........	Name of Animal.	Breed.
62	J. D. Gillett, Elkhart	872	1,845	2 11	John Sherman ..	Grade Shorthorn
63	J. D. Gillett, Elkhart	964	1,940	2 01	Cherry	" "
64	J. D. Gillett, Elkhart.... ...	964	1,755	1 82	Oakley	" "
65	J. D. Gillett, Elkhart	992	1,685	1 69	Clincher	" "
66	J. D. Gillett, Elkhart.... ...	780	1,635	2 09	Chance....... ...	" "
67	J. D. Gillett, Elkhart	992	1,770	1 78	Cash	" "
68	J. D. Gillett, Elkhart........	903	1,580	1 74	Garfield	" "
70	J. D. Gillett, Elkhart	903	1,515	1 67	Storm	" "
71	J. D. Gillett, Elkhart........	811	1,605	1 97	Chub	" "
72	J. D. Gillett, Elkhart	872	1,935	2 21	Wild Bill	" "
	Average...........	905	1,726	1 91		

CAR LOAD NO. 2.

No.	Exhibiter.	Age in days, Nov. 4, 1881.........	Weight, Nov. 4, 1881........	Average gain per day in pounds, since birth........	Name of Animal.	Breed.
9	H. C. Nelson, Canton	907	1,525	1 68	Belton............	Shorthorn ....
10	H. C. Nelson, Canton	862	1,450	1.68	Quid Esset	"
87	H. C. Nelson, Canton	964	1,600	1 65	Quid Sit	Grade Shorthorn
88	H. C. Nelson, Canton	889	1,420	1.59	Si Quid	" "
89	H. C. Nelson, Canton	954	1,460	1 53	Quid Nunc	" "
90	H. C Nelson, Canton	1,044	1,525	1 46	Quid Nam	" "
91	H. C. Nelson, Canton	899	1,375	1 52	Nam Si	" "
92	H. C. Nelson, Canton	893	1,440	1 61	Si Nam	" "
93	H. C Nelson, Canton	1,062	1,550	1 50	Nam ;Quid	" "
94	H. C, Nelson, Canton	900	1,405	1 56	Slow Go...... ..	" "
	Average..........	,934	1,475	1.58		

First premium, $150, to car load No. 1, exhibited by J. D. Gillett, Elkhart.
Second premium, $75, to car load No. 2, exhibited by H. C. Nelson, Canton.

REPORT OF COMMITTEE.

The uniformity of the first premium lot of cattle was noticeable, and the average gain per day of the entire number remarkable.

The steers were Grade Shorthorns, and creditable specimens, and as butchers' stock gave assurance of cutting to profit, both for the dealer and consumer.

The lot of cattle awarded the second premium was much above the average of choice steers; they were not as uniform in type as the first premium lot, or as smooth, and were coarser in bone.

LOT 9—DRESSED BULLOCKS.

WEIGHTS OF VARIOUS PARTS OF SLAUGHTERED STEERS.

Steers 3 and under 4 years.

Name of Steer.	Breed.	Age in days	Average gain per day since birth	Weight at home	Live weight at slaughter	Weight dressed carcass	Per cent. net carcass to gross weight	Weight, carcass, hide and tallow	Per ct. profitable wt., carcass, hide and tallow, to gr or live wt.	Tallow	Hide	Left fore quarter	Right fore quarter	Left hind quarter
Broad Horns	Grade Hereford	1,291	1 42	1,900	1,830	1,227½	67 076	1,399	76 448	68½	103	345	340	277½
Cloud	Grade Shorthorn	1,329	1 47	2,015	1,940	1,295	66 752	1,508	77.731	114	99	352½	345	302½
Quid	Grade Shorthorn	1,234	1.43	1,850	1,770	1,177½	66.526	1,354	76 497	93	83½	315	330	275
Average		1,284	1 44	1,922	1,846	1,233	66 784	1,420	76 892	92	95	337	338	285

Steer 2 and under 3 years.

Name of Steer.	Breed.	Age in days	Average gain per day since birth	Weight at home	Live weight at slaughter	Weight dressed carcass	Per cent. net carcass to gross weight	Weight, carcass, hide and tallow	Per ct. profitable wt., carcass, hide and tallow, to gr or live wt.	Tallow	Hide	Left fore quarter	Right fore quarter	Left hind quarter
Ab. Pratt	Grade Hereford	1,065	1 59	*1,675	*1,675	1,092½	65 223	1,311	78 268	125½	93	290	285	265
Echerd	Grade Shorthorn	880	1 70	1,516	1,460	977½	66 952	1,145	78 424	81	87	267½	242½	232½
Average		972	1 64	1,595	1,567	1,035	66 087	1,228	78.346	103	90	273	263	248

Steer 1 and under 2 years.

Name of Steer.	Breed.	Age in days	Average gain per day since birth	Weight at home	Live weight at slaughter	Weight dressed carcass	Per cent. net carcass to gross weight	Weight, carcass, hide and tallow	Per ct. profitable wt., carcass, hide and tallow, to gr or live wt.	Tallow	Hide	Left fore quarter	Right fore quarter	Left hind quarter
Bailey	Grade Hereford	622	2 05	*1,280	1,197	730	60 985	883	73 767	70	83	195	185	175

* Live weight November 4, 1881.

LOT 9—DRESSED BULLOCKS—*Continued.*

Name of Steer.	Breed.	Right hind quarter	Head	Feet	Paunch	Guts	Liver	Heart	Tongue	Lungs	Hide trimmings	Blood	Shrinkage
Broad Horns	Grade Hereford	265	36½	19	138	55½	15	6½	13	24½	10	41	72
Cloud	Grade Shorthorn	295	35	22½	153	66	21	7½	10½	22	10½	46	38
Quid	Grade Shorthorn	257½	32½	20½	156	47½	15	6½	10½	19	12½	36	60
Average		272	34	21	149	56	17	6⅞	11⅓	22	11	41	56
		Steer 2 and under 3 years.											
Ab. Pratt	Grade Hereford	252½	34	18½	128	51½	12	5	9	18½	17	44½	26
Echerd	Grade Shorthorn	235	37	18	94½	40½	12½	5½	9½	16	6	44½	31
Average		243	35	18¼	111¼	46	12¼	5¼	9¼	17¼	11½	44½	28½
		Steer 1 and under 2 years.											
Bailey	Grade Hereford	175	38	15½	87	37	13	5	8½	17	17	51½	25

REPORT OF COMMITTEE.

Carcass of steer 3 and under 4 years—Premium, $50, to steer Broadhorns, exhibited by C. M. Culbertson, Chicago.
Carcass of steer 2 and under 3 years—Premium, $50, to steer Echerd, exhibited by David Grant, Petersburg.
Carcass of steer 1 and under 2 years—Premium, $50, to steer Bailey, exhibited by G. S Burleigh, Mechanicsville, Iowa.

LOT 10—DRESSED BULLOCKS—SWEEPSTAKES

Carcass of steer of any age—Premium, $75, to steer Broadhorns, exhibited by C. M. Culbertson, Chicago.

LOT 11—HEAVIEST FAT STEER.

No.	Exhibiter.	Age in days, Nov. 4, 1881.	Weight Nov. 4, 1881	Average gain per day in pounds, since birth	Name of Steer.	Breed.
119	J. D. Gillett, Elkhart	1,633	2,435	1 49	Gen. Grant	Grade Shorthorn
120	John B. Sherman, Chicago	3,123	2,900	0 92	Nels. Morris	" "
121	John B. Sherman, Chicago	2,393	2,760	1 15	Tim	" "
103	John Shering, Florid.	1,544	2,370	1 53	Florid Duke	Shorthorn
104	G.S.Burleigh, Mchans'lle,Ia	1,691	2,600	1 53	Star	Grade Hereford.
122	J. S. Zartman, Freeport	1,633	2,505	1 53	Freeport	Grade Shorthorn
123	J. S. Zartman, Freeport	1,607	2,120	1 31	Stephenson	" "
106	J. Gains & Son, Farm Ridge	2,059	2,800	1 36	Conover	" "
124	John B. Sherman, Chicago.	1,998	2,345	1 17	Foote	" "
125	John B. Sherman, Chicago	2,819	2,400	0 85	Vermilion	Shorthorn
	Average	2,050	2,523	1 28		

First premium, $75, to steer Nels. Morris, exhibited by John B. Sherman, Chicago.
Second premium, $50, to steer Conover, exhibited by James Gains & Son, Farm Ridge.
Third premium, $25, to Steer Tim, exhibited by John B. Sherman, Chicago.

LOT 12—EARLY MATURITY

Steer showing the greatest average gain per day since birth—steer 3 and under 4 years.

No	Exhibiter	Age in days Nov. 4, 1881	Weight Nov. 4, 1881	Average gain per day in pounds since birth	Name of Steer.	Breed.
35	J. D. Gillett, Elkhart	1,176	2,130	1 81	Phil Sheridan	Grade Shorthorn
43	T. L. Miller Co., Beecher	1,190	2,145	1 80	Conqueror	Grade Hereford.
45	T. L. Miller Co., Beecher	1,190	2,035	1 71	Bachelor	" "
31	J. D. Gillett, Elkhart	1,237	2,095	1 69	McMullen	Grade Shorthorn
46	Amos F Moore, Polo	1,298	2,185	1 68	Hawks	" "
30	J. D. Gillett, Elkhart	1,268	3,140	1.68	Read	" "
49	Morrow&Muir,Clintonv.,Ky	1,105	1,855	1 67	Frosty	" "
113	J D Gillett, Elkhart	1,237	2,075	1 67	White Cream	" "
40	T. W. Hunt, Ashton	1,217	2,015	1 65	Increase	" "
3	John B. Sherman, Chicago.	1,309	2,150	1 64	Morris	Shorthorn
	Average	1,223	2,082	1 70		

First premium, $50, to steer Phil. Sheridan, exhibited by J. D. Gillett, Elkhart.
Second premium, $25, to steer Conqueror, exhibited by T. L Miller Co., Beecher.

Steer 2 and under 3 years.

No.	Exhibiter.	Age in days, Nov. 4, 1881	Weight Nov. 4, 1881	Average gain per day in pounds since birth	Name of Steer.	Breed.
72	J. D. Gillett, Elkhart	872	1,935	2.21	Wild Bill	Grade Shorthorn
62	J. D. Gillett, Elkhart	872	1,845	2.11	John Sherman	" "
66	J. D. Gillett, Elkhart	780	1,635	2.09	Chance	" "
63	J. D. Gillett, Elkhart	964	1,940	2.01	Cherry	" "
71	J. D. Gillett, Elkhart	811	1,605	1.97	Chub	" "
78	T. W. Hunt, Ashton	920	1,760	1.91	Thad. Stevens	" "
85	T. L. Miller Co., Beecher	1,054	1,925	1.82	Kansas	Grade Hereford.
64	J. D. Gillett, Elkhart	964	1,755	1.82	Oakley	Grade Shorthorn
81	David Grant, Petersburg	1,052	1,900	1.80	John Bull	" "
83	D. W. Smith, Bates	947	1,710	1.80	Col. Mills	" "
	Average	924	1,801	1.95		

First premium, $50, to steer Wild Bill, exhibited by J. D. Gillett, Elkhart.
Second premium, $25, to steer John Sherman, exhibited by J. D. Gillett, Elkhart.

Steer 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 4, 1881	Weight, Nov. 4, 1881	Average gain per day in pounds, since birth	Name of Steer.	Breed.
97	J. H. Potts & Son, Jacksonville	719	1,565	2.17	Major	Grade Shorthorn
99	G. S. Burleigh, Mechanicsville, Ia	622	1,280	2.05	Bailey	Grado Hereford
96	T.W. Hunt, Ashton.	620	1,250	2.01	Geo. Washington	Grade Shorthorn
98	Cobb & Phillips, Kankakee.	680	1,320	1.94	Red Acomb	" "
95	C. M. Culbertson, Chicago	685	1,025	1.49	Curly	Grade Hereford.
25	L. Rawson, Oak Creek, Wis.	614	850	1.38	Bill	Devon
26	L. Rawson, Oak Creek, Wis.	614	835	1.36	Jim	"
27	L. Rawson, Oak Creek, Wis.	600	690	1.15	Max	"
	Average	644	1,102	1.70		

First premium, $50, to steer Major, exhibited by J. H. Potts & Son, Jacksonville.
Second premium, $25, to steer Bailey, exhibited by G. S. Burleigh, Mechanicsville, Iowa.

CLASS B—HORSES.

DAVID E. BEATY, *Superintendent*

To the State Board of Agriculture

The exhibit of Horses, in connection with the Fat Stock Show, while not originally contemplated by the Board, has been far from a disadvantage.

It is believed that if horse breeders were encouraged, a much larger and more attractive exhibition would be assured.

The following will give an idea of the extent and character of the last exhibit of horses.

No. Stall ...	Name and Post Office of Exhibiter.	Date of Birth	Age in days.	Weight Nov 4, 1881	Average gain per day in pounds since birth	Name of Animal.	Breed.
147	Lewis Adams, Chicago ..	Oct 1876		......	......	Vetoe	Roadster ..
148	A. H. Taylor, Chicago.	June 1876		...	.....	Grand Union ..	Trotter ......
149	A. H. Taylor, Chicago	April 15 1873		....	.....	Montgomery	" ......
150	A. H Taylor, Chicago	May . 1867		.	. .	Florida	" .....
151	David McKay, Chicago	Oct 1875		1,610	.....	Young Conquer'r	Norman .....
152	David McKay, Chicago .	May 1877		1,765	.....	Maria	English Draft
153	David McKay, Chicago	May 1878		1,625	.....	Lochiel	Clydesdale
154	David McKay, Chicago	June . 1874		1,775	.....	Young Wallace	"
155	David McKay, Chicago ..	July .. 1875		1,845	..	Sir Wm. Wallace	"
156	Crumpacker, Winter & Co., Westville, Ind ...	April . 1877		1,800	......	Grevey	Norman ......
157	Crumpacker, Winter & Co., Westville, Ind ..	May . 1878		1,700	......	What you Want.	" ......
158	Crumpacker, Winter & Co., Westville, Ind	April .. 1879		1,700	.....	Vidocq	" ......
159	Crumpacker, Winter & Co., Westville, Ind	June . 1879		1,550	.....	Algerian	" ... ..

Respectfully submitted.

D. E. BEATY,
Superintendent Class B, Horses.

CATALOGUE—CLASS A—CATTLE.

W. M. SMITH, *Superintendent.*

No	Name and Postoffice of Exhibiter.	Age, in days	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.	Breed.	Color.
1	John B. Sherman, Chicago	928	1,300	1 40	Perfect	Grade Shorthorn	Red and white.
2	John B. Sherman, Chicago	926	1,630	1.76	Cherub	" "	Roan
3	John B. Sherman, Chicago	1,266	2,055	1 62	Belmont	Shorthorn	Red
4	John B. Sherman, Chicago	1 078	1 930	1 79	Corporal	"	"
5	John B Sherman, Chicago	1,131	1 835	1 62	Robin Hood	"	"
6	John B. Sherman, Chicago	1,298	1,825	1 40	Beveridge	Grade Shorthorn	Roan
7	John B Sherman, Chicago	1,298	1,890	1 45	Frank	" "	Red
8	John B Sherman, Chicago	1,421	1,930	1 35	Boynton	Shorthorn	Red and white
9	John B. Sherman, Chicago	1,237	2,000	1 61	Jim Blaine	Grade Shorthorn	White
10	John B. Sherman, Chicago	1,309	2,150	1 64	Morris	Shorthorn	Red
11	John B. Sherman, Chicago	1,362	2,200	1 61	Abe Renick	"	"
12	John B. Sherman, Chicago	1,998	2,345	1.17	Foote	Grade Shorthorn	Roan
13	John B. Sherman, Chicago	2,819	2,400	0 85	Vermilion	Shorthorn	Red and white.
14	John B. Sherman, Chicago	2 035	2 490	1 22	Eddy Morris	"	Red
15	John B Sherman, Chicago	2,393	2,760	1 15	Tim	Grade Shorthorn	"
16	John B. Sherman, Chicago	3,123	2,900	0 92	Nels Morris	" "	White
17	J. S. Zartman, Freeport, Ill	1,607	2,120	1 31	Stephenson	" "	Red
18	J. S. Zartman, Freeport, Ill	1,633	2,505	1 53	Freeport	" "	Roan
19	Amos F. Moore, Polo, Ill	1,298	2,185	1 68	Hawks	" "	Red and white
20	J H. Potts & Son, Jacksonville, Ill	2 424	1,865	0 76	Geneva's Pride	Shorthorn	Red
21	J. H Potts & Son, Jacksonville, Ill.	719	1 565	2.17	Major	Grade Shorthorn	Roan
22	David Grant, Petersburg, Ill	1,052	1,900	1 80	John Bull	" "	Red
23	David Grant, Petersburg, Ill.	880	1,500	1 70	Echerd	" "	Roan
24	Canada West Farm Stock Asso'n, Brantford, Ont	1,873	1,875	1 00	Lady Aberdeen 3	Shorthorn	"
25	Dunlap Bros., Abingdon, Ill.	1,055	1,855	1 75	Airdrie Boy	"	White
26	Dunlap Bros., Abingdon, Ill.	830	1,485	1 78	Mary Boy	"	"
27	John Shering, Florid, Ill.	1,544	2,370	1 53	Florid Duke	"	Red
28	Cobb & Phillips, Kankakee, Ill	679	1,320	1 94	Red Acomb	Grade Shorthorn	"
29	D. W. Smith, Bates, Ill	917	1,485	1 61	White Lady	" "	White
30	D. W Smith, Bates, Ill	917	1,710	1 80	Col. Mills	" "	Roan
31	Nelson Jones, Towanda, Ill	2,157	1,785	0 82	Miss Molly Bates	Shorthorn	Red
32	James Gains & Son, Ridge Farm, Ill	2,059	2,800	1 36	Conover	Grade Shorthorn	"
33	Morrow & Muir, Clintonville, Ky	1,284	1,910	1 48	Cunningham	" "	Roan
34	Morrow & Muir, Clintonville, Ky	1,085	1,895	1 74	Muir	Shorthorn	Red and white.

35	Morrow & Muir, Clintonville Ky	1,293	2,065	1 59	Lem	Grade Shorthorn	Red
36	Morrow & Muir, Clintonville, Ky	1,303	2,010	1 54	Samson	" "	"
37	Morrow & Muir, Clintonville, Ky	1,105	1,855	1 67	Frosty	" "	Red and white.
38	Morrow & Muir, Clintonville, Ky	1,282	1,815	1 41	Clay	" "	Roan
39	Morrow & Muir, Clintonville, Ky	1,298	1,855	1 42	Lunce	" "	Red
40	Morrow & Muir, Clintonville, Ky	1,510	2,125	1 40	Bell	Shorthorn	Roan
41	Morrow & Muir, Clintonville, Ky	1,251	1,990	1 59	Bush	Grade Shorthorn	Red
42	Morrow & Muir, Clintonville, Ky	1,324	2,085	1 57	Talbott	" "	"
43	Morrow & Muir, Clintonville, Ky	1,282	1,900	1 48	Tom	" "	Red and white.
44	Morrow & Muir, Clintonville, Ky	1,319	1 870	1 41	Dick	" "	" "
45	T L. Miller Co., Beecher, Ill	1,190	2,145	1 80	Conqueror	Grade Hereford	" "
46	T. L. Miller Co , Beecher, Ill	1,190	2,035	1 71	Bachelor	" "	" "
47	T. L. Miller Co., Beecher, Ill	1,224	1,965	1 60	Will	Hereford	" "
48	T. L. Miller Co., Beecher, Ill.	1,242	1,980	1 55	Washington	"	" "
49	T L Miller Co., Beecher, Ill	1,054	1,925	1 82	Kansas	Grade Hereford	" "
50	T. L Miller Co., Beecher, Ill.	1,145	1,700	1 48	Tom Brown	" "	" "
51	T. L. Miller Co , Beecher, Ill.	1,135	1,550	1 36	Oxford	" "	" "
52	T. L. Miller Co., Beecher, Ill	923	1,700	1 84	Crystal	Hereford Bull	" "
53	T. E. Miller, Beecher, Ill	2,243	1,560	0 69	Maid of the Mist, 1365	Hereford	" "
54	T. E Miller, Beecher, Ill	1,326	1,335	1 00	Lady Elliott, 2150	"	" "
55	Thos. Clark, Beecher, Ill	1,777	1,410	0 79	May Queen II	"	" "
56	L. Rawson, Oak Creek, Wis	1,328	1,230	0 92	Buck	Devon	Red
57	L. Rawson, Oak Creek, Wis.	1,268	1,075	0 84	Broad	"	"
58	L. Rawson, Oak Creek, Wis.	928	925	0 99	John	"	"
58	L. Rawson, Oak Creek, Wis.	969	975	1 00	Jerry	"	"
58	L. Rawson, Oak Creek, Wis.	614	835	1.36	Jim	"	"
59	L. Rawson, Oak Creek, Wis.	882	1,030	1 16	Tom	"	"
60	L. Rawson, Oak Creek, Wis.	600	690	1 15	Max	"	"
60	L. Rawson, Oak Creek, Wis.	614	850	1 38	Bill	"	"
61	C. M. Culbertson, Chicago	1,039	1,485	1 42	Spot Face	Grade Hereford	Red and white.
62	C M. Culbertson, Chicago	685	1,025	1 49	Curly	" "	" "
63	C. M. Culbertson, Chicago	1,056	1,675	1 58	Left	" "	" "
64	C M. Culbertson, Chicago	1,056	1,715	1 62	Right	" "	" "
65	C. M. Culbertson, Chicago	1,291	1,835	1.42	Broad Horns	" "	" "
66	C. M. Culbertson, Chicago	2,059	1,925	0 93	Beefy Back	" "	" "
68	Charles K. Parmelee, Wolcott Station, Ind	1,082	1,215	1 12	Roxana	Herefore Heifer	" "
69	Charles K. Parmelee, Wolcott Station, Ind	365	880	2 41	Anxiety 4th	Hereford Bull	" "
69	Charles K. Parmelee, Wolcott Station, Ind	209	500	2 39	Manito	" "	" "
70	Charles K. Parmelee, Wolcott Station, Ind	251	520	2 07	Emeline 2	Hereford Heifer	" "
70	Charles K. Parmelee, Wolcott Station, Ind	256	565	2 20	Helene 6	" "	" "
71	Charles K Parmelee, Wolcott Station, Ind	249	610	2 44	Calico	" "	" "
71	Charles K. Parmelee, Wolcott Station, Ind	329	745	2 26	Beatrice	" "	" "
72	Charles K. Parmelee, Wolcott Station, Ind	199	500	2 51	Magnet	" "	" "
72	Charles K Parmelee, Wolcott Station, Ind	193	400	2 07	Lady Tuscola	" "	" "
73	G. S Burleigh, Mechanicsville, Ia	267	725	2 71	Rose	Heref'd and Shorth'n	" "
74	G. S. Burleigh, Mechanicsville, Ia	622	1,280	2 05	Baily	Grade Hereford	" "
75	G. S Burleigh, Mechanicsville, Ia	1,065	1,675	1 57	Ab. Pratt	Heref'd and Shorth'n	" "
76	G. S. Burleigh, Mechanicsville, Ia	1,694	2,600	1 53	Star	Grade Hereford	" "
77	T. W. Hunt, Ashton, Ill	1,287	1,940	1 50	Sam Noe	Grade Shorthorn	Red
78	T. W Hunt, Ashton, Ill	1,290	2,050	1 58	Red Chub	" "	"
79	T. W. Hunt, Ashton, Ill	1 362	1,825	1 39	Pickrell	" "	Red-roan
80	T. W. Hunt, Ashton, Ill	1,217	2,015	1 65	Increase	" "	Red

Class A—Cattle—Continued.

No.	Name and Postoffice of Exhibiter.	Age, in days	Weight, Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.	Breed.	Color.
81	T W. Hunt, Ashton, Ill	1,066	1,755	1 64	Royal Charmer	Grade Shorthorn	Red
82	T W. Hunt, Ashton, Ill	1,045	1,765	1 68	Red Lord	" "	"
83	T W Hunt, Ashton, Ill	920	1 760	1 91	Thad Stevens 2	" "	Roan
84	T. W Hunt, Ashton, Ill	1 028	1 855	1 80	Sensation	" "	Red
85	T. W Hunt, Ashton, Ill	872	1,505	1 72	Baron	" "	Red-roan
86	T. W. Hunt, Ashton, Ill	620	1,250	2.01	Washington	" "	Red
87	H. C. Nelson, Canton, Ill	1,237	1,880	1 51	Quid-si-nam	" "	Red and white
88	H C. Nelson, Canton, Ill	1,032	1,550	1 50	Nam Quid	" "	Roan
89	H. C Nelson, Canton, Ill	900	1,405	1 56	Slow-go	" "	Red
90	H. C. Nelson, Conton, Ill	893	1,440	1 61	Si-nam	" "	Roan
91	H C. Nelson, Canton, Ill	1,156	1 625	1 40	Short-sir	" "	Red
92	H. C. Nelson, Canton, Ill	1,234	1,775	1 43	Quid	" "	Red and white
93	H. C. Nelson, Canton, Ill	1,981	1,500	0 75	Airdrienne 4th	Shorthorn	Red
94	H. C. Nelson, Canton, Ill	899	1,375	1 52	Nam-si	Grade Shorthorn	Red and white
95	H C. Nelson, Canton, Ill	862	1,450	1 68	Quid-esset	Shorthorn	Red
96	H. C. Nelson, Canton, Ill	964	1,600	1 65	Quid-sit	Grade Shorthorn	Red and white
97	H. C. Nelson, Canton, Ill	907	1,525	1 68	Belton	Shorthorn	" "
98	H. C. Nelson, Canton, Ill	954	1,460	1 53	Quid Nunc	Grade Shorthorn	Red
99	H. C. Nelson, Canton, Ill	890	1,420	1 59	Si-quid	" "	Red and white
100	H. C. Nelson, Canton, Ill	1,044	1,525	1 46	Quid Nam	" "	Red
101	J D. Gillett, Elkhart, Ill	1,329	2,100	1 58	McCue	" "	Roan
102	J. D. Gillett, Elkhart, Ill	1,268	2 015	1 58	Pell	" "	"
103	J. D. Gillett, Elkhart, Ill	1,268	2,140	1 68	Read	" "	"
104	J D. Gillett, Elkhart, Ill	1,176	2,130	1 81	Phil. Sheridan	" "	Red
105	J. D. Gillett, Elkhart, Ill	1,357	1,900	1 40	Blackstone	" "	Roan
106	J. D. Gillett, Elkhart, Ill	1,237	2,010	1 62	Blood	" "	Red
107	J D. Gillett, Elkhart, Ill	1,237	2,095	1 69	McMullen	" "	"
108	J. D. Gillett, Elkhart, Ill	1,633	2,435	1 49	General Grant	" "	"
109	J. D. Gillett, Elkhart, Ill	964	1,940	2 01	Cherry	" "	"
110	J. D. Gillett, Elkhart, Ill	992	1,685	1 69	Clincher	" "	Roan
111	J. D. Gillett, Elkhart, Ill	780	1,635	2 09	Chance	" "	"
112	J. D. Gillett, Elkhart, Ill	903	1,515	1 67	Storm	" "	Red
113	J. D. Gillett, Elkhart, Ill	872	1,935	2 21	Wild Bill	" "	"
114	J. D. Gillett, Elkhart, Ill	964	1,755	1 82	Oakley	" "	"
115	J. D. Gillett, Elkhart, Ill	903	1,580	1 74	Garfield	" "	"
116	J. D. Gillett, Elkhart, Ill	903	1,580	1 74	Arthur	" "	"
117	J. D. Gillett, Elkhart, Ill	872	1,845	2 11	John Sherman	" "	"

118	J D Gillett Elkhart Ill	1,268	1,520	1 19	Lady Peerless	“ “	“
119	J. D. Gillett, Elkhart, Ill	811	1,605	1 97	Chub	“ “	Roan
120	J. D. Gillett, Elkhart, Ill.	1,268	1,910	1 50	Downhorn	“ “	Red
121	J. D. Gillett, Elkhart, Ill	992	1,770	1 78	Cash.	“ “	“
122	J D Gillett, Elkhart, Ill	1,268	1,995	1 57	Barney	“ “	“
124	J. D Gillett, Elkhart, Ill	1,329	1,965	1 47	Cloud	“ “	“
125	J. D. Gillett, Elkhart, Ill	1,268	1,885	1 48	Snow	“ “	White
125	J. D Gillett, Elkhart, Ill	1,329	1,930	1 45	Milk	“ “	“
125	J. D. Gillett, Elkhart, Ill	1,329	2,105	1 58	White Lad	“ “	“
125	J. D. Gillett, Elkhart, Ill	1,329	2,045	1 53	Norway	“ “	“
125	J D. Gillett, Elkhart, Ill	1,268	2,050	1 61	White Feather	“ “	“
125	J D. Gillett, Elkhart, Ill	1,268	1 740	1 57	Arctic	“ “	“
125	J. D Gillett, Elkhart, Ill	1,237	2,075	1 67	White Cream	“ “	“
125	J. D Gillett, Elkhart, Ill	1,237	1 825	1 48	Downy	“ “	“
126	Illinois Industrial University, Champaign	1,004	1,305	1 29	Jack	Ayrshire	Red and white.
127	Illinois Industrial University, Champaign	978	1,300	1 33	Thomas	$^7/_8$ Devon	Red
128	Illinois Industrial University, Champaign	917	1,215	1 32	May Duke	“	“
129	Illinois Indust ial University, Champaign	1,129	1,670	1 47	Burnham	Grade Hereford	Red and white.
130	Illinois Industrial University Champaign	806	1,335	1 65	Junior	“ “	“ “
131	Illinois Industrial University, Champaign	947	1,500	1 58	Ezra	Shorthorn	Roan
132	Illinois Industrial University, Champaign	978	1,430	1 46	Oscar	Grade Shorthorn	“
133	Geo. H Hood, Guelph, Can					Polled Angus Bull	Black

REPORTS OF AWARDING COMMITTEES.

CLASS C—SHEEP.

LOT 14—LONG WOOLS.

Wether 2 and under 3 years.

No.	Exhibiter.	Age, in days, Nov 4, 1881	Weight, Nov. 4, 1881...........	Average gain per day in pounds, since birth	Name of Animal	Breed.
139	J. A. Brown & Son, Decatur	978	232	0 23	Dick	Cotswold.... ...
140	J. A. Brown & Son, Decatur	978	230	0 23	Curly.....	" ....
141	M. N. Hood, Guelph, Can	933	280	0 30	Tom.....	" ......
142	M. N. Hood, Guelph, Can..	933	281	0 30	Dick	" ... ...
143	M. N. Hood, Guelph, Can	933	232	0 25	Harry	" .... ..
	Average..................	951	251	0 26		

First premium, $12, to Dick, exhibited by J. A. Brown & Son, Decatur.
Second premium, $8, to Tom, exhibited by M. N. Hood, Guelph, Can.
Third premium, $5, to Curly, exhibited by J. A. Brown & Son, Decatur.

REPORT OF COMMITTEE.

In this ring, five animals were shown- all good.

The first premium wether was the squarest sheep, with very full ham, and highly developed in the best mutton points, possessing evenly-distributed solid flesh, with good butchering qualities.

The animal awarded second prize was rather soft in flesh, and would not cut to so good advantage as the sheep given the first place.

The third premium animal compared quite favorably with its competitors in external appearance, but was slightly deficient in opening qualities.

Wether 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov 4, 1881..........	Weight Nov. 4, 1881......	Average gain per day in pounds since birth......	Name of Animal.	Breed.
144	J. A. Brown & Son, Decatur	613	192	0 31	Billy..............	Cotswold.... ..
145	J A. Brown & Son, Decatur	613	185	0 30	Tommy....	" .... ..
146	M. N. Hood, Guelph, Can.	568	205	0 36	Sandy	" ..., ..
	Average..................	598	194	0 32		

First premium, $12, to Sandy, exhibited by M. N. Hood, Guelph, Can.
Second premium, $8, to Billy, exhibited by J. A. Brown & Son, Decatur.
Third premium, $5, to Tommy, exhibited by J. A. Brown & Son, Decatur.

REPORT OF COMMITTEE.

Three animals were shown in this ring; all fine yearlings, showing high development and good keep.

The animal awarded first premium was heavier and better matured than his competitors. In other respects the lot was quite even, all showing good killing qualities.

Ewe 2 and under 3 years.

No.	Exhibiter.	Age in days, Nov 4, 1881	Weight Nov 4, 1881	Average gain per day, in pounds, since birth . .	Name of Animal.	Breed
147	J. A. Brown & Son, Decatur	978	244	0 25	Daisy	Cotswold.. . .

First premium, $12, to Daisy, exhibited by J. A. Brown & Son, Decatur

REPORT OF COMMITTEE.

In this ring only one animal was shown, to which the first premium was awarded, by unanimous vote of the committee

Daisy was exhibited by J. A Brown & Son, of Decatur, and considered a very good animal for meat production. Although forced to take honors without a contest, she would have made a good showing in any ring.

Ewe 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov 4, 1881.........	Weight Nov. 4, 1881.	Average gain per day, in pounds, since birth......	Name of Animal.	Breed.
148	Morgan & Cotton, Camargo	584	208	0 36	Wonder	Cotswold.........
149	Morgan & Cotton, Camargo	583	208	0 36	Perfection	" ....
150	F. Willson Jackson, Mich..	613	260	0 42	Maud S	" ....
151	Morgan & Cotton, Camargo	599	200	0 33	Lovely............	" ....
152	Abner Strawn, Ottawa	599	235	0 39	No. 475.........	" ....
153	Abner Strawn, Ottawa	598	245	0.40	No. 476..........	" ....
154	Abner Strawn, Ottawa......	597	231	0 38	No. 478	" ....
	Average	596	226	0 38		

First premium, $12, to Maud S., exhibited by Frank Willson, Jackson, Mich

Second premium, $8, to No. 476, exhibited by Abner Strawn, Ottawa.

Third premium, $5, to Perfection, exhibited by Morgan & Cotton, Camargo.

REPORT OF COMMITTEE.

A well grown lot of seven yearlings was shown in this ring

The first premium sheep was slightly better in ham, with better opening qualities than the others comprising the ring, though not so heavy nor well turned as the wethers of equal age. The ring, however, was pronounced a very good one

Ewe under 1 year.

	Exhibiter.	Age, in days, Nov 4, 1881	Weight Nov 4, 1881	Average gain per day, in pounds, since birth.....	Name of Animal	Breed.
155	F. Willson, Jackson, Mich	248	108	0 43	Willson 1st ...	Cotswold.. .. ..
156	F. Willson, Jackson, Mich	217	99	0 45	Willson 2d... ..	" ....
157	Abner Strawn, Ottawa.....	231	136	0 59	No. 465	" ... .
158	Abner Strawn, Ottawa	230	128	0 56	No. 466	" ....
159	Abner Strawn, Ottawa	229	136	0 59	No. 467	" ... .
	Average......	231	121	0 52		

First premium, $12, to No. 465, exhibited by Abner Strawn, Ottawa.

Second premium, $8, to No 467, exhibited by Abner Strawn, Ottawa.

Third premium, $5, to No. 466, exhibited by Abner Strawn, Ottawa.

REPORT OF COMMITTEE.

The five animals exhibited in this ring were a very fair lot, showing good breeding and keep, resulting in admirable development for animals of their age.

Nos 465, 467 and 466, exhibited by Abner Strawn, of Ottawa, were awarded first, second and third premiums, respectively.

LOT 15—MIDDLE WOOLS

Wether 2 and under 3 years

No	Exhibiter	Age in days Nov 4 1881	Weight Nov 4 1881	Average gain per day in pounds since birth	Name of Animal	Breed
160	J H Potts & Son Jacksonville	964	185	0 19	Bally	Southdown
161	J H Potts & Son Jacksonville	964	187	0 19	Jack	
162	J H Potts & Son Jacksonville	964	201	0 20	Charley ..	
163	J V Muir Clintonville Ky	1 006	209	0 20	Swift	
164	J V Muir Clintonville Ky	1 006	195	0 19	Ford	
165	Morgan & Cotton, Camargo	949	232	0 24	Model	Shropshire
166	Morgan & Cotton Camargo	943	221	0 23	Major	
	Average	971	204	0 21		

First premium $12 to Model exhibited by Morgan & Cotton Camargo
Second premium $8 to Major exhibited by Morgan & Cotton Camargo
Third premium $5 to Charley exhibited by J H Potts & Son Jacksonville

REPORT OF COMMITTEE.

Seven animals—two Shropshires and five Southdowns—constituted this ring making a very fine display

The sheep awarded first and second premiums were Shropshiredowns bred in Illinois from imported parents

The third premium animal was a Southdown of high merit

The entire ring was pronounced as fine as anything ever shown in a fat stock exhibition

Wether 1 and under 2 years

No	Exhibiter	Age in days Nov 4 1881	Weight Nov 4 1881	Average gain per day in pounds since birth	Name of Animal	Breed
167	J H Potts & Son Jacksonville	582	156	0 26	Tom	Southdown
168	J H Potts & Son Jacksonville	582	147	0 25	Dick	
169	J H Potts & Son Jacksonville	588	165	0 28	Harry	
170	Morgan & Cotton Camargo	580	196	0 34	Monarch	Shropshire
171	Morgan & Cotton Camargo	573	167	0 29	Milton	
172	M N Hood Guelph Can	568	152	0 27	Duncan	Southdown
173	M N Hood Guelph Can	568	165	0 29	Donald	
	Average	577	164	0 28		

First premium $12 to Monarch exhibited by Morgan & Cotton Camargo
Second premium $8 to Harry exhibited by J H Potts & Son Jacksonville
Third premium $5 to Duncan exhibited by M N Hood Guelph Can

REPORT OF COMMITTEE.

Seven animals—five Southdowns and two Shropshires—constituted this ring and the lot was pronounced exceptionally fine even in size and flesh

The first premium was given to Monarch a finely developed Shropshiredown wether, the second to Harry a Southdown and the third to Duncan a Shropshiredown

In both this and the preceding ring the honors were so evenly divided between the contesting breeds as to leave their respective champions little reason for boasting

Wether under 1 year

No	Exhibiter	Age in days Nov 4 1881	Weight Nov 4 1881	Average gain per day in pounds since birth	Name of Animal	Breed
174	J H Potts & Son Jacksonville	213	193	0 90	No 21	Southdown
175	J H Potts & Son Jacksonville	213	193	0 90	No 28	
	Average	213	193	0 90		

First premium $12 to No 21 exhibited by J H Potts & Son Jacksonville
Second premium $8 to No 28 exhibited by J H Potts & Son Jacksonville

REPORT OF COMMITTEE.

But two animals were shown in this ring They were fine specimens of the Southdown breed the property of one exhibiter and fully merited the premiums awarded

Ewe 2 and under 3 years

No	Exhibiter	Age in days Nov 4 1881	Weight Nov 4 1881	Average gain per day in pounds since birth	Name of Animal	Breed
176	J A Brown & Son Decatur	978	220	0 23	Lady	Shropshire

First premium $12 to Lady exhibited by J A Brown & Son Decatur

REPORT OF COMMITTEE

The single sheep shown in this ring was an admirable specimen of her breed well bred and fattened and was worthy her honors though won without a contest

LOT 17—GRADES OR CROSSES

Wether 2 and under 3 years

No	Exhibiter	Age in days Nov 4 1881	Weight Nov 1 1881	Average gain per day in pounds since birth	Name of Animal	Breed
177	John Hudson Moawequa	959	188	0 19	Horace Greeley	Grade Shropshire
178	F Willson Jackson Mich	978	274	0 28	Arkel	Grade Cotswold
	Average	968	231	0 24		

First premium $12 to Arkel exhibited by Frank Willson Jackson Mich
Third premium $5 to Horace Greeley exhibited by John Hudson Moawequa

REPORT OF COMMITTEE.

Only two animals were shown in this ring, and were fair representatives of the two-year-old class. The wether given the first premium was in better flesh and more fully developed than his competitor, was sired by a Cotswold ram, dam a Southdown ewe. This animal had run on pasture without grain for two months, but since August 1 was fed oats and corn.

No second premium was awarded.

The animal given third place was a cross from a Shropshiredown sire on a Cotswold ewe; was fed corn and grass, and recently allowed small rations of oil cake. Flock averaged about nine pounds of unwashed wool

Wether 1 and under 2 years.

No.	Exhibitor.	Age in days, Nov. 4, 1881	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
179	John Hudson, Moawequa	601	130	0 21	Diamond..	Gr'de Shropshire
180	M. N. Hood, Guelph, Can	568	189	0 33	Jim..	Grade Oxford....
181	M N. Hood, Guelph, Can	568	193	0 34	Ned	" " ....
182	F. Willson, Jackson, Mich.	613	166	0 27	Mack..........	Grade Cotswold
	Average	587	169	0 29		

First premium, $12. to Jim, exhibited by M N Hood, Guelph, Canada.

Second premium, $8, to Ned, exhibited by M. N Hood, Guelph, Canada.

Third premium, $5, to Mack, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

The first premium animal was from an Oxford ram and a Cotswold ewe; was allowed pasture, with oats and pea-meal, and recently a diet of turnips; also regular allowance of Thorley's food

The second premium animal was from an Oxford ram and a Grade Leicester ewe; was fed in the same manner as the first premium sheep

The sheep receiving third money was from a Cotswold sire and Grade Merino ewe; was allowed to run on pasture, and since August 1 was fed corn and oats

Wether under 1 year.

No	Exhibitor	Age in days, Nov 4, 1881	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
183	John Hudson, Moawequa	236	107	0 45	Parnell	Gr'de Shropshire
184	M. N. Hood, Guelph, Can	203	129	0 63	John	Gr'de Southdown
185	M. N. Hood, Guelph, Can .	203	115	0 50	Abe	Grade Oxford..
	Average.	214	117	0 52		

First premium, $12, to Abe, exhibited by M. N. Hood, Guelph, Can.

Second premium, $8, to John, exhibited by M. N Hood, Guelph, Can.

Third premium, $5, to Parnell, exhibited by John Hudson, Moawequa

REPORT OF COMMITTEE.

The first premium animal was from an Oxford sire and Grade Southdown ewe.

The lamb awarded second premium was from a Southdown ram and a Grade Cotswold ewe.

The animal given third place was from a Shropshiredown sire and a Cotswold-Southdown ewe; was fed on grass alone since weaning, which occurred during latter part of August.

Ewe 2 and under 3 years.

No.	Exhibiter.	Age in days, Nov 4, 1881...	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth.....	Name of Animal.	Breed.
186	John Hudson, Moawequa	970	164	0 17	Vic Woodhull ..	Gr'de Shropshire

First premium, $12, to Vic Woodhull, exhibited by John Hudson, Moawequa.

REPORT OF COMMITTEE.

In this ring, but one animal was shown, a fine specimen, in good condition, bred from a Shropshiredown sire and a Cotswold-Southdown ewe, was fed on grass and corn, with recently some oil cake.

Ewe 1 and under 2 years

No.	Exhibiter.	Age, in days, Nov 4, 1881	Weight Nov 4, 1881	Average gain per day, in pounds, since birth	Name of Animal	Breed.
187	John Hudson, Moawequa	598	144	0 24	Nannie	Gr'de Shropshire
188	M. N. Hood, Guelph, Can	568	177	0 31	Peggy	Grade Oxford ...
189	M. N. Hood, Guelph, Can	568	177	0 31	Betty	" " .. .
190	M. N. Hood, Guelph, Can	568	159	0 28	Flora	" " ....
	Average	575	164	0 28		

First premium, $12, to Peggy, exhibited by M. N. Hood, Guelph, Can.

Second premium, $8, to Betty, exhibited by M N. Hood, Guelph, Can.

Third premium, $5, to Flora, exhibited by M. N. Hood, Guelph, Can

REPORT OF COMMITTEE.

The premium animals in this ring were from an Oxford sire and a cross Cotswold-Leicester dam, and were on pasture feed alone, until shipped to the Show.

Ewe under 1 year.

No.	Exhibitor.	Age, in days, Nov. 4, 1881..........	Weight Nov. 4, 1881	Average gain per day, in lbs., since birth	Name of Animal.	Breed
191	John Hudson, Moawequa	232	92	0 39	Miss Nancy.......	Gr'de Shropshire
192	M. N. Hood, Guelph, Can	203	102	0 50	Lily	Grade Oxford....
193	M. N. Hood, Guelph, Can	203	103	0 50	Daisy	" " ....
194	M. N. Hood, Guelph, Can	203	125	0 61	Rosy	" " ...
195	F. Willson, Jackson, Mich	203	103	0 50	Jennie	Grade Cotswold
196	M. N. Hood, Guelph, Can .	203	99	0 48	Eugenia.	Grade Merino...
	Average..................	208	104	0 50		

First premium, $12, to Rosy, exhibited by M N Hood, Guelph, Can.
Second premium, $8, to Daisy, exhibited by M N. Hood, Guelph, Can.
Third premium, $5, to Lily, exhibited by M. N. Hood, Guelph, Can

REPORT OF COMMITTEE.

The first premium lamb was from an Oxford sire and a grade Cotswold-Southdown ewe; had been on pasture, with no other feed, until shipped for the Show.

The second and third premium animals were from an Oxford ram and Cotswold ewe, had been fed some oats and peas and allowed access to pasture.

LOT 18—SWEEPSTAKES.

Wether 2 and under 3 years.

No	Exhibiter.	Age, in days, Nov. 4, 1881	Weight Nov 4, 1881	Average gain per day, in pounds, since birth ..	Name of Animal	Breed.
160	J.H.Potts & Son,J'cksonv'le	964	185	0 19	Bally	Southdown ......
161	J.H Potts & Son,J'cksonv'le	964	187	0 19	Jack	"
163	J V Muir, Clintonville, Ky	1,006	209	0 20	Swift............	" ......
164	J. V. Muir, Clintonville, Ky	1,006	195	0 19	Ford	" ......
140	J. A. Brown & Son, Decatur	978	230	0 23	Curly	Cotswold .. ...
165	Morgan & Cotton, Camargo	949	232	0 24	Model...	Shropshire.......
166	Morgan & Cotton, Camargo	943	221	0 23	Major	" ......
178	F. Willson, Jackson, Mich	978	274	0 28	Arkel	Grade Cotswold.
141	M. N. Hood, Guelph, Can	933	280	0 30	Tom	Cotswold ... .
142	M. N. Hood, Guelph, Can..	933	281	0 30	Dick	" .. ...
	Average.........	965	229	0 23		

Sweepstakes premium, $25, to Arkel, exhibited by Frank Willson, Jackson, Mich

REPORT OF COMMITTEE.

Ten animals were shown in this ring, all in fine condition, and pronounced by judges a magnificent lot, comprising Cotswolds, Southdowns, Shropshiredowns and Crosses.

The premium wether, a Southdown-Cotswold cross, showed remarkable development in the best meat-producing points; was well filled and evenly fatted.

Wether 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov. 4, 1884	Weight Nov. 4, 1884	Average gain per day, in pounds, since birth ..	Name of Animal	Breed.
167	J. H. Potts & Son, Jack'ville	582	156	0 26	Tom	Southdown ......
168	J. H. Potts & Son, Jackville	582	147	0 25	Dick	" ......
169	J. H. Potts & Son, Jack'ville	588	165	0 28	Harry	" .....
144	J. A. Brown & Son, Decatur	613	192	0 31	Billy	Cotswold . ...
170	Morgan & Cotton, Camargo	580	196	0 34	Monarch . ..	Shropshire ....
171	Morgan & Cotton, Camargo	573	167	0 29	Milton	" . ..
180	M. N. Hood, Guelph, Can	568	189	[illegible] 33	Jim	Grade Oxford ..
181	M. N. Hood, Guelph, Can	568	193	0 31	Ned.	" .
146	M. N. Hood, Guelph, Can	568	205	0 36	Sandy	Cotswold. .. ...
	Average......	580	179	0 31		

Sweepstakes premium, $25, to Harry, exhibited by J. H. Potts & Son, Jacksonville.

REPORT OF COMMITTEE.

In this ring nine good animals were shown, including Cotswolds, Southdowns, Shropshiredowns, and one fine specimen of Oxford-Cotswold.

Wether under 1 year

No	Exhibiter	Age, in days, Nov 4 1884 . .	Weight Nov. 4 1884	Average gain per day in pounds, since birth	Name of Animal.	Breed
174	J. H. Potts & Son, Jack'ville	213	193	0 90	No 21	Southdown ......
175	J. H. Potts & Son, Jack'ville	213	193	0 90	No 28 . . .	" .
183	John Hudson, Moawequa	236	107	0 45	Parnell . ..	Gr'de Shropshire
184	M. N. Hood, Guelph, Can	203	129	0 63	John	Gr'de Southdown
185	M. N. Hood, Guelph, Can	203	115	0 56	Abe	Grade Oxford ..
	Average	213	147	0 69		

Sweepstakes premium, $25, to Abe, exhibited by Geo. Hood, Guelph, Can

Ewe 2 and under 3 years.

No.	Exhibiter	Age, in days, Nov 4, 1881.	Weight Nov 4, 1881	Average gain per day in pounds since birth......	Name of Animal.	Breed.
147	J. A. Brown & Son, Decatur	978	224	0 25	Daisy............	Cotswold .. . ..
176	J. A. Brown & Son, Decatur	978	220	0 23	Lady	Shropshire ......
186	John Hudson, Moawequa	970	164	0 17	Vic. Woodhull...	Gr'de Shropshire
	Average	975	203	0 21		

Sweepstakes premium, $25, to Daisy, exhibited by J. A. Brown & Son, Decatur.

Ewe 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov. 4, 1881	Weight Nov 4, 1881......... ...	Average gain per day, in pounds, since birth.....	Name of Animal.	Breed.
187	John Hudson, Moawequa	598	144	0 24	Nannie	Gr'de Shropshire
150	F Willson, Jackson, Mich	613	260	0 42	Maud S...	Cotswold ... ...
188	M. N Hood, Guelph, Can	568	177	0 31	Peggy	Grade Oxford...
189	M N. Hood, Guelph, Can	568	177	0 81	Betty	" " ..
152	Abner Strawn, Ottawa	599	235	0 39	No 475............	Cotswold ... .
153	Abner Strawn, Ottawa	598	245	0 40	No. 476	" .. ..
	Average..................	590	206	0 34		

Sweepstakes premium, $25, to No 476, exhibited by Abner Strawn, Ottawa.

Ewe under 1 year.

No	Exhibiter.	Age, in days, Nov 4, 1881..........	Weight Nov 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
155	F. Willson, Jackson, Mich	248	108	0 43	Willson I....	Cotswold... ...
192	M. N. Hood, Guelph, Can ..	203	102	0 50	Lily	Grade Oxford...
193	M. N. Hood, Guelph, Can.	203	103	0 50	Daisy.	" " . ..
194	M. N. Hood, Guelph, Can..	203	125	0 61	Rosy.......	" " ..
196	M. N. Hood, Guelph, Can..	203	99	0.48	Eugenie	Grade Merino ..
157	Abner Strawn, Ottawa......	231	136	0 59	No 465............	Cotswold. ... ...
158	Abner Strawn, Ottawa......	230	128	0 56	No 466	" . .. ..
159	Abner Strawn, Ottawa......	229	136	0 59	No. 467...	" . .. ...
	Average	218	117	0 53		

Sweepstakes premium, $25, to No. 466, exhibited by Abner Strawn, Ottawa.

LOT 19—GRAND SWEEPSTAKES

Best Wether or Ewe in the Show

No	Exhibitor	Age in days Nov 4 1881	Weight Nov 4 1881	Average gain per day in pounds since birth	Name of Animal	Breed
167	J H Potts & Son Jacksville	582	156	0 26	Tom	Southdown
160	J H Potts & Son Jacksville	914	185	0 19	Bally	
197	J H Potts & Son Jacksville	1 684	183	0 10	No 10	
198	J V Muir Clintonville Ky	1 371	218	0 16	Steve	
199	J V Muir Clintonville Ky	1 371	199	0 15	Bill	
139	J A Brown & Son Decatur	978	232	0 23	Dick	Cotswold
147	J A Brown & Son Decatur	978	244	0 25	Daisy	
165	Morgan & Cotton Camargo	949	232	0 24	Model	Shropshire
166	Morgan & Cotton Camargo	943	221	0 23	Major	
178	F Willson Jackson Mich	978	274	0 28	Arkel	Grade Cotswold
141	M N Hood Guelph Can	933	280	0 30	Tom	Cotswold
142	M N Hood Guelph Can	933	281	0 30	Dick	
152	Abner Strawn Ottawa	599	235	0 39	No 475	
153	Abner Strawn Ottawa	598	245	0 40	No 476	
	Average	990	227	0 24		

Premium $30 to Model exhibited by Morgan & Cotton Camargo

REPORT OF COMMITTEE

Fourteen animals were shown in this ring—Cotswolds Southdowns and Shropshire downs with one grade Cotswold All were well fatted though the two year old sheep showed somewhat highest flesh The prize animal was a Shropshiredown remarkably developed in ham and loin carrying fat well distributed indicating fine opening qualities

LOT 20—HEAVIEST FAT SHEEP

Open to all

Wether or Ewe of any age

No	Exhibitor	Age in days Nov 4 1881	Weight Nov 4 1881	Average gain per day in pounds since birth	Name of Animal	Breed
178	F Willson Jackson Mich	978	274	0 28	Arkel	Grade Cotswold
141	M N Hood Guelph Can	933	280	0 30	Tom	Cotswold
142	M N Hood Guelph Can	933	281	0 30	Dick	
180	M N Hood Guelph Can	568	189	0 33	Jim	Grade Oxford
153	Abner Strawn Ottawa	598	245	0 40	No 476	Cotswold
200	Abner Strawn, Ottawa	1 323	262	0 19	Blank	
	Average	888	255	0 30		

Premium $50 to Dick exhibited by M N Hood Guelph Can

LOT 21—CAR LOADS.

30 *Fat Wethers 2 and under 3 years.*

CAR LOAD. No. 1.

(Average weight, 164 pounds.)

Exhibiter.	Name of Animal.	Breed.
John Hudson, Moawequa	Moses	Grade Shropshire.
John Hudson, Moawequa	Aaron	" "
John Hudson, Moawequa	Jack	" "
John Hudson, Moawequa	Caps	" "
John Hudson, Moawequa	Colonel	" "
John Hudson, Moawequa	John	" "
John Hudson, Moawequa	Josh	" "
John Hudson, Moawequa	Tom	" "
John Hudson, Moawequa	Dick	" "
John Hudson, Moawequa	Sherman	" "
John Hudson, Moawequa	Lightfoot	" "
John Hudson, Moawequa	Bob	" "
John Hudson, Moawequa	General	" "
John Hudson, Moawequa	Hancock	" "
John Hudson, Moawequa	Cronin	" "
John Hudson, Moawequa	Grant	" "
John Hudson, Moawequa	Arthur	" "
John Hudson, Moawequa	Sam	" "
John Hudson, Moawequa	Frank	" "
John Hudson, Moawequa	Ben	" "
John Hudson, Moawequa	Abe	" "
John Hudson, Moawequa	Tim	" "
John Hudson, Moawequa	Jim	" "
John Hudson, Moawequa	Mansfield	" "
John Hudson, Moawequa	Woodhull	" "
John Hudson, Moawequa	Carter Harrison	" "
John Hudson, Moawequa	Marshall Field	" "
John Hudson, Moawequa	John Logan	" "
John Hudson, Moawequa	David Davis	" "
John Hudson, Moawequa	Horace Greeley	" "

CAR LOAD No 2.

(Average weight, 153 pounds.)

Morrow & Muir, Clintonville, Ky	No. 1	Southdown
Morrow & Muir, Clintonville, Ky	No 2	"
Morrow & Muir, Clintonville, Ky	No. 3	"
Morrow & Muir, Clintonville, Ky	No. 4	"
Morrow & Muir, Clintonville, Ky	No. 5	"
Morrow & Muir, Clintonville, Ky	No. 6	"
Morrow & Muir, Clintonville, Ky	No. 7	"
Morrow & Muir, Clintonville, Ky	No. 8	"
Morrow & Muir, Clintonville, Ky	No. 9	"
Morrow & Muir, Clintonville, Ky	No 10	"
Morrow & Muir, Clintonville, Ky	No. 11	"
Morrow & Muir, Clintonville, Ky	No. 12	"
Morrow & Muir, Clintonville, Ky	No. 13	"
Morrow & Muir, Clintonville, Ky	No. 14	"
Morrow & Muir, Clintonville, Ky	No. 15	"
Morrow & Muir, Clintonville, Ky	No. 16	"
Morrow & Muir, Clintonville, Ky	No. 17	"
Morrow & Muir, Clintonville, Ky	No. 18	"
Morrow & Muir, Clintonville, Ky	No. 19	"
Morrow & Muir, Clintonville, Ky	No 20	"
Morrow & Muir, Clintonville, Ky	No. 21	"
Morrow & Muir, Clintonville, Ky	No. 22	"
Morrow & Muir, Clintonville, Ky	No. 23	"
Morrow & Muir, Clintonville, Ky	No. 24	"
Morrow & Muir, Clintonville, Ky	No. 25	"
Morrow & Muir, Clintonville, Ky	No 26	"
Morrow & Muir, Clintonville, Ky	No. 27	"
Morrow & Muir, Clintonville, Ky	No 28	"
Morrow & Muir, Clintonville, Ky	No. 29	"
Morrow & Muir, Clintonville, Ky	No. 30	"

First premium, $60, to car load No 2, exhibited by Morrow & Muir, Clintonville, Ky.
Second premium, $30, to car load No. 1, exhibited by John Hudson, Moawequa.

CATALOGUE—CLASS C—SHEEP.

E. B. DAVID, *Superintendent.*

No. of Stall	Name and Postoffice of Exhibiter.	Age, in days, Nov. 4, 1881.	Weight Nov. 4, 1881.	Average gain per day in pounds, since birth	Name of Animal.	Breed.
1	J. H. Potts & Son, Jack'ville	964	185	0 18	Bally	Southdown
1	J. H. Potts & Son, Jack'ville	964	187	0 19	Jack	"
1	J. H Potts & Son, Jack'ville	964	201	0 20	Charley	"
2	J.H.Potts & Son,J'cksonv'le	582	156	0 26	Tom	"
2	J.H.Potts & Son,J'cksonv'le	582	147	0 25	Dick	"
2	J.H.Potts & Son,J'cksonv'le	588	165	0 28	Harry	"
3	J.H.Potts & Son,J'cksonv'le	213	193	0.90	No. 21	"
3	J.H.Potts & Son,J'cksonv'le	213	193	0 90	No. 28	"
3	J H.Potts & Son,J'cksonv'le	1,684	183	0 10	No. 10	"
4	J. V. Muir, Clintonville, Ky	1,006	209	0 20	Swift	"
4	J. V. Muir, Clintonville, Ky.	1,006	195	0 19	Ford	"
4	J V Muir, Clintonville, Ky.	1,371	202	0 15	Charley	"
4	J. V. Muir, Clintonville, Ky.	1,371	218	0 16	Steve	"
4	J V Muir, Clintonville, Ky	1,371	199	0 15	Bill	"
19	N Y. Sheep Breeders' Ass'n	2,042	138	0.06	Livingston	Merino
19	N Y. Sheep Breeders' Ass'n	2,377	127	0 05	Modoc II.	"
19	N Y. Sheep Breeders' Ass'n	2,042	125	0 06	Levenice	"
19	N Y. Sheep Breeders' Ass'n	2,042	127	0 06	Bloomfield	"
19	N Y Sheep Breeders' Ass'n	2,042	140	0 07	Avon	"
20	N. Y Sheep Breeders' Ass'n	2,042	121	0 06	Ontario.	"
21	J A Brown & Son, Decatur	613	185	0 30	Tommy	Cotswold.
21	J. A. Brown & Son, Decatur	613	192	0.31	Billy	"
21	J. A. Brown & Son, Decatur	978	214	0 25	Daisy.	"
22	J. A. Brown & Son, Decatur	978	230	0.23	Curly	"
22	J A. Brown & Son, Decatur	978	232	0 23	Dick	"
22	J A. Brown & Son, Decatur	978	220	0.23	Lady	Shropshire
23	John Hudson, Moawequa	601	130	0 21	Diamond	Gr'de Shropshire
23	John Hudson, Moawequa	236	107	0.45	Parnell	" "
23	John Hudson, Moawequa	598	144	0 24	Nannie	" "
23	John Hudson, Moawequa	232	92	0 39	Miss Nancy	" "
23	John Hudson, Moawequa	970	164	0 17	Vic Woodhull	" "
23	John Hudson, Moawequa	959	188	0.19	Horace Greeley.	" "
24	Morgan & Cotton, Camargo	584	208	0 36	Wonder	Cotswold
24	Morgan & Cotton, Camargo	583	208	0.36	Perfection	"
24	Morgan & Cotton, Camargo	599	200	0 33	Lovely	"
25	Morgan & Cotton, Camargo	...	...	...	Breeding Ewe	Shropshire
25	Morgan & Cotton, Camargo	...	...	...	" "	"
25	Morgan & Cotton, Camargo	...	...	...	" "	"
26	Morgan & Cotton, Camargo	949	232	0.24	Model	"
26	Morgan & Cotton, Camargo	943	221	0 23	Major	"
26	Morgan & Cotton, Camargo	580	196	0 34	Monarch	"
26	Morgan & Cotton, Camargo	573	167	0 29	Milton	"
27	Morgan & Cotton, Camargo	1,306	198	0 15	Mischief	"
29	F Willson, Jackson, Mich	613	198	0 32	Jerry	Cotswold
29	F. Willson, Jackson, Mich	613	260	0 42	Maud S.	"
29	F. Willson, Jackson, Mich.	978	274	0 28	Arkel.	Grade Cotswold.
29	F. Willson, Jackson, Mich	613	166	0 27	Mack	" "
30	F. Willson, Jackson, Mich.	248	108	0 43	Willson I	Cotswold
30	F. Willson, Jackson, Mich	217	99	0 45	Willson II.	"
30	F. Willson, Jackson, Mich	613	153	0 25	Chubby	Southdown
30	F. Willson, Jackson, Mich..	203	103	0 50	Jennie.	Grade Cotswold.
32	Abner Strawn, Ottawa	599	235	0.39	No 475	Cotswold.
32	Abner Strawn, Ottawa	1,323	262	0 19	...	"
32	Abner Strawn, Ottawa	598	245	0 40	No. 476	"
32	Abner Strawn, Ottawa	591	222	0.37	No. 481	"
32	Abner Strawn, Ottawa	597	231	0 38	No. 478	"
32	Abner Strawn, Ottawa	592	228	0 38	No. 480	"
33	Abner Strawn, Ottawa	...	...	...	Six yearling ewes	"
34	Abner Strawn, Ottawa	231	136	0 59	No. 465	"
34	Abner Strawn, Ottawa	230	128	0 56	No. 466	"
34	Abner Strawn, Ottawa	229	136	0 59	No. 467	"
55	Abner Strawn, Ottawa	...	...	...	12 yearling rams.	Cotswold
56	Abner Strawn, Ottawa	...	...	...	5 3-year-old ewes	"

Class C—Sheep—Continued.

No. of Stall	Name and Postoffice of Exhibiter	Age, in days, Nov. 4, 1881	Weight Nov. 4, 1881	Average gain per day in pounds since birth	Name of Animal.	Breed.
57	Abner Strawn, Ottawa	...	...	...	5 3-year-old ewes	Cotswold
63	M. N. Hood, Guelph, Can.	203	129	0 63	John	Gr'de Southdown
63	M. N. Hood, Guelph, Can	203	115	0 56	Abe	Grade Oxford
64	M. N. Hood, Guelph, Can	203	102	0 50	Lily	"
64	M. N. Hood, Guelph, Can	203	103	0 50	Daisy	"
64	M. N. Hood, Guelph, Can	203	125	0 61	Rosy	"
64	M. N. Hood, Guelph, Can	203	99	0 48	Eugenio	Grade Merino
65	M. N. Hood, Guelph, Can	568	177	0 31	Peggie	Grade Oxford
65	M. N. Hood, Guelph, Can.	568	177	0 31	Bettie	"
65	M. N. Hood, Guelph, Can.	568	159	0 28	Flora	"
65	M. N. Hood, Guelph, Can	933	190	0 20	Bell	Southdown
66	M. N. Hood, Guelph, Can	568	152	0 27	Duncan	"
66	M. N. Hood, Guelph, Can	568	165	0 29	Donald	"
66	M. N. Hood, Guelph Can	568	189	0 33	Jim	Grade Oxford
66	M. N. Hood, Guelph, Can.	568	193	0 34	Ned	"
67	M. N. Hood, Guelph, Can	933	280	0 30	Tom	Cotswold
67	M. N. Hood, Guelph, Can.	933	281	0 30	Dick	"
67	M. N. Hood, Guelph, Can.	933	232	0.25	Harry	"
67	M N. Hood, Guelph, Can.	568	205	0 36	Sandy	"
68	M N. Hood, Guelph, Can.	...	...	...	3 French rams	Merino
69	John Hudson, Moawequa	...	...	...	Carl'd 30 wethers.	Gr'de Shropshire
70	Morrow & Muir, Clint'nv., Ky	...	...	...	" "	Southdown

REPORTS OF AWARDING COMMITTEES.

CLASS D—SWINE.

LOT 23—BERKSHIRES

Barrow 1 and under 2 years

No	Exhibitor	Age in days Nov 4 1881	Weight Nov 4 1881	Average gain per day in pounds since birth	Name of Animal
260	Taylor Bros Waynesville	431	428	0 99	George

First premium $12 to George exhibited by Taylor Bros Waynesville

REPORT OF COMMITTEE.

The only entry in this ring was a well matured hog fifteen months old weighing 428 pounds evenly and squarely built with finely developed hams good back and loins deep sides standing low and showing a large percentage of profitable meat to weight of carcass

Sow 1 and under 2 years

No	Exhibiter	Age in days Nov 4 1881	Weight Nov 4 1881	Average gain per day in pounds since birth	Name of Animal
261	Scheidt & Davis Dyer Ind	551	482	0 87	Miss Butterfly
262	Scheidt & Davis Dyer Ind	551	444	0 80	Miss Butterfly II
	Average ..	551	463	0 84	

First premium $12 to Miss Butterfly exhibited by Scheidt & Davis Dyer Ind
Second premium $8 to Miss Buttterfly II exhibited by Scheidt & Davis Dyer Ind

REPORT OF COMMITTEE.

There were two entries; both were farrowed May 2, 1880, their weights were respectively 482 and 444 pounds. There was very little difference between these sows, but the heavier of the two was somewhat better in back and deeper in sides. The first premium was, therefore, given to her, and the second to her competitor.

LOT 24 POLAND CHINA.

Barrow 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov 4, 1881	Weight Nov. 4, 1881..........	Average gain per day, in pounds, since birth......	Name of Animal.
263	H. C. Castle, Wilmington..................	694	685	0 98	Crown Prince........
264	H. C. Castle, Wilmington....................	385	433	1 12	Prince Albert 5th...
265	H. C. Castle, Wilmington.....................	385	444	1 15	Prince Albert 6th...
	Average	488	520	1 08	

First premium, $12, to Crown Prince, exhibited by H. C. Castle, Wilmington.
Second premium, $8, to Prince Albert 5th, exhibited by H. C. Castle, Wilmington
Third premium, $5, to Prince Albert 6th, exhibited by H. C. Castle, Wilmington.

REPORT OF COMMITTEE.

This ring comprised three entries, one farrowed December 10, 1879, and the others October 15, 1880. The weight of the first was 685 pounds, and of the other two 444 and 433 pounds, respectively. All of these animals were fine specimens of butchers' stock. The first premium was given to the oldest and heaviest hog, the committee pronouncing him a model barrow, with fine bone, straight top and bottom lines, well developed hams and shoulders and deep sides, slightly deficient only immediately behind the shoulders.

The difference between the other two hogs was slight, both being remarkably good barrows The second premium was awarded to the heavier of the two, as being a little smoother throughout than the other

Sow 1 and under 2 years.

No.	Exhibiter.	Age in days, Nov. 4, 1881.	Weight Nov. 4, 1881..........	Average gain per day in pounds, since birth......	Name of Animal.
266	H. C. Castle, Wilmington	694	557	0 80	Black Rose ....

First premium, $12, to Black Rose, exhibited by H. C. Castle, Wilmington.

REPORT OF COMMITTEE.

The only entry in this ring was a good animal 23 months old, with a good back and loin, well developed generally, but rather coarse in head and jowl.

The committee were unanimous in considering her worthy of the first premium.

Sow under 1 year.

No.	Exhibiter.	Age, in days, Nov. 4, 1881........	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.
267	H. C. Castle, Wilmington..................	257	328	1 27	Oxford Rose.........
268	H. C. Castle, Wilmington................	234	284	1 21	Augusta 7th..........
	Average	245	306	1 24	

First premium, $12, to Oxford Rose, exhibited by H. C. Castle, Wilmington.

Second premium, $8, to Augusta 7th, exhibited by H. C. Castle, Wilmington.

REPORT OF COMMITTEE.

In this ring there were but two entries—one a March pig, and the other farrowed in February. Their weights were 328 and 284 pounds respectively, the older being the heavier. Both were superior specimens of butchers' stock, and the difference between them was slight. The first premium was awarded to the heavier of the two, the committee deciding that she was more evenly developed and better in head and jowl than the younger sow, to which the second premium was given, and was richly merited.

LOT 25—CHESTER WHITE.

Barrow 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov. 4, 1881........	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.
269	Taylor Bros., Waynesville	431	385	0 89	Jim ....

First premium, $12, to Jim, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

There was but one entry in this ring—a fair representative of the breed, and in good flesh.

Sow 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov. 4, 1881......	Weight Nov. 4, 1881........	Average gain per day, in pounds, since birth.....	Name of Animal.
270	Taylor Bros., Waynesville..................	371	307	0 82	Beauty ....

First premium, $12, to Beauty, exhibited by Taylor Bros., Wavnesville.

REPORT OF COMMITTEE.

A single entry was made under this head—a very fair animal, well matured, with straight back, deep sides, and standing low, but rather coarse in bone, but deemed worthy of a first premium.

Sow under 1 year.

No	Exhibitor.	Age, in days, Nov. 4, 1881.........	Weight Nov. 1, 1881.........	Average gain per day, in pounds, since birth.....	Name of Animal.
271	J. A Brown & Son, Decatur	198	293	1.47	Pet... ... .
272	Taylor Bros., Waynesville...	190	200	1.05	Jane....... ....
	Average..........	194	246	1.26	

First premium, $12, to Pet, exhibited by J. A. Brown & Son, Decatur.

REPORT OF COMMITTEE.

The contest in this ring was between two April pigs, very nearly the same age. The first premium was given to No 271 for her straighter back, larger ham, straighter lines and deeper sides. No second premium was awarded, as the other animal entered was not considered worthy.

LOT 26—ESSEX.

Barrow under 1 year.

No.	Exhibiter.	Age, in days, Nov. 4, 1881	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.
273	Frank Willson, Jackson, Mich	177	207	1 16	Walter................
274	Frank Willson, Jackson, Mich..............	177	198	1 11	Major.................
275	Taylor Bros., Waynesville	307	232	0 75	Willson.... ....
	Average........................	220	212	1 00	

First premium, $12, to Walter, exhibited by Frank Willson, Jackson, Mich.

Second premium, $8, to Willson, exhibited by Taylor Bros., Waynesville.

Third premium, $5, to Major, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

This ring consisted of three entries, all about six months old, and very good pigs, well developed for their age. The points in which the pig excelled, to which the committee gave the first premium, were squareness of form, smoothness, thick loin and fine bone. The opinion of the committee was unanimous that he would dress out more prime meat to weight of carcass than either of the others.

The pig to which the second premium was awarded was nearly as fine as the first prize animal, lacking only in shoulder and head to equal his rival.

The committee recognized also the merits of the remaining entry, and gave it the third premium.

Sow 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov. 4, 1881	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.
276	Frank Willson Jackson, Mich	525	341	0 64	Brunette. .. ..
277	Taylor Bros., Waynesville	431	391	0 90	Sarah. .. ..
	Average	478	366	0 77	

First premium, $12, to Sarah, exhibited by Taylor Bros., Waynesville.

Second premium, $8, to Brunette, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

The two animals comprising this ring were of nearly the same age. The committee gave the first premium to No. 276, by reason of her smoother form, better top and bottom lines, finer back and loin, and as being the most profitable for both butcher and consumer. The other animal was adjudged as highly worthy of the second premium.

Sow under 1 year.

No.	Exhibiter.	Age in days, Nov 4, 1881	Weight, Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.
278	Frank Willson, Jackson, Mich	199	229	1 15	Belle
279	Frank Willson, Jackson, Mich	199	210	1 05	Mary
280	Taylor Bros., Waynesville	307	210	0 68	Belle
	Average	235	216	0 96	

First premium, $12, to Mary, exhibited by Frank Willson, Jackson, Mich.

Second premium, $8, to Belle, exhibited by Taylor Bros., Waynesville.

Third premium, $5, to Belle, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

There were three entries in this ring, all nearly of the same age all good pigs, with very slight differences in weight.

The first premium was awarded to an animal excelling in back and loin, and being the most profitable pig for market.

The second premium was given to a sow surpassing in ripeness and profit her rival.

The third animal was adjudged eminently worthy of the third premium.

LOT 27—GRADES OR CROSSES.

Barrow 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov. 4, 1881	Weight Nov 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
281	F. Willson, Jackson, Mich.	592	410	0 69	Ben	Grade Suffolk

First premium, $12, to Ben, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

The only entry under this head was a hog nearly 20 months old, weighing 410 pounds; a fine animal when judged from a butcher's standpoint, carrying a well proportioned shoulder, with moderately good ham, fine back and loin

This hog was a cross of an Essex sire upon a Suffolk dam. The Suffolk is shown in his fine bone. He was given first premium.

Barrow under 1 year.

No	Exhibiter	Age in days, Nov 4, 1881	Weight Nov 4, 1881	Average gain per day in lbs, since birth	Name of Animal	Breed.
282	Harry Davis, Dyer Ind	341	325	0 95	Duke ..	Victoria ....
283	Scheidt & Davis, Dyer, Ind	341	327	0 95	Hector	" ....
	Average	341	326	0 95		

First premium, $12, to Duke, exhibited by Harry Davis, Dyer, Ind

Second premium, $8, to Hector, exhibited by Scheidt & Davis, Dyer, Ind.

REPORT OF COMMITTEE.

This ring was composed of two entries known as Victoria hogs, the result of four crosses to-wit the Berkshire on Poland China on one side and the Chester White upon the Suffolk on the other the progeny of the crosses interbred In these hogs the characteristics of the Berkshire predominate, save in color Both animals entered were very fine

The first premium was awarded to the more compact hog of the two, he having also somewhat better hams and sides

The second premium hog was a very fine animal, profitable for both butcher and consumer

Sow 1 and under 2 years

No	Exhibiter	Age in days Nov 4 1881	Weight Nov 4 1881	Average gain per day in pounds since birth	Name of Animal	Breed
284	Scheidt & Davis Dyer, Ind	510	501	0 98	Queen Victoria	Victoria . .
285	Scheidt & Davis Dyer, Ind	510	420	0 82	Fannie Field	"
	Average .	510	460	0 90		

First premium, $12, to Queen Victoria exhibited by Scheidt & Davis, Dyer, Ind

Second premium $8 to Fannie Field exhibited by Scheidt & Davis Dyer, Ind

REPORT OF COMMITTEE.

But two entries competed in this ring, both superb animals, 17 months old and weighing respectively 501 and 420 pounds The first premium was awarded to the heaviest, as being more squarely built, rather finer in bone and somewhat better than the other in back and loin The committee considered this sow a model for the butcher. The second premium was well merited by the remaining entry

Sow under 1 year.

No.	Exhibiter.	Age, in days, Nov 4, 1881.	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth ..	Name of Animal	Breed.
286	Scheidt & Davis, Dyer, Ind	341	343	1 00	Duchess.	Victoria ....
287	Scheidt & Davis, Dyer, Ind	341	350	1 02	White Lady	" .. ..
288	Scheidt & Davis, Dyer, Ind	341	300	0 87	Topsy	" ....
289	Taylor Bros., Waynesville	276	283	1 02	Nellie. .. .	Grade Suffolk .
	Average.	324	319	0 98		

First premium, $12, to White Lady, exhibited by Scheidt & Davis, Dyer, Ind.

Second premium, $8, to Duchess, exhibited by Scheidt & Davis, Dyer, Ind.

Third premium $5, to Nellie, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

In this ring there were four entries—three Victorias, and the fourth three-fourths Suffolk and one-fourth Chester White, composing a very even lot.

The committee examined them critically, and awarded the first premium to White Lady, whose superiority consisted in somewhat better developed hams and sides. This sow was very squarely built and very nearly represented the butcher's ideal of perfection.

The second premium was awarded to Duchess, and the third to Nellie, but the difference between them was slight, the superiority of the former consisting in being somewhat more symmetrical and better in back and loin.

LOT 28—SWEEPSTAKES.

Barrow 1 and under 2 years.

No	Exhibiter	Age in days, Nov 4, 1881	Weight Nov 4, 1881 ...	Average gain per day, in pounds, since birth	Name of Animal	Breed
281	F Willson, Jackson, Mich	592	410	0 69	Ben	Grade Suffolk ..
290	Thos. Bennett, Rossville	504	597	1 18	Muskogee.	Red Berkshire.
269	Taylor Bros, Waynesville	431	385	0 89	Jim	Chester White.
260	Taylor Bros, Waynesville	431	428	0 99	George	Berkshire . ..
263	H. C. Castle, Wilmington.	694	685	0 98	Crown Prince	Poland . .. .
264	H C. Castle, Wilmington.	385	433	1 12	Prince Albert 5th	" . . ..
265	H C. Castle, Wilmington	385	444	1 15	Prince Albert 6th	" .. .. ..
	Average	489	483	1 00		

Sweepstakes premium, $25, to Muskogee, exhibited by Thos. Bennett, Rossville.

REPORT OF COMMITTEE.

Seven entries composed this ring, all good hogs and well fatted. The committee gave the premium to a very even hog, with lighter bone, and more profitable as giving less shrinkage to gross weight than any other animal in the ring. His age was 504 days; weight, 597 pounds; average gain per day, 1 18 pounds.

Barrow under 1 year.

No.	Exhibiter.	Age, in days, Nov. 4, 1881	Weight, Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal	Breed.
273	F. Willson, Jackson, Mich	177	207	1 16	Walter	Essex............
274	F. Willson, Jackson, Mich .	177	198	1 11	Major.	“ .. ..
282	Harry Davis, Dyer, Ind ..	341	325	0 95	Duke...... . ..	Victoria.........
283	Scheidt & Davis, Dyer, Ind.	341	327	0 95	Hector....	“ ....
275	Taylor Bros., Waynesville	307	232	0 75	Willson...........	Essex............
	Average	269	258	0 98		

Sweepstakes premium, $25, to Walter, exhibited by Frank Willson, Jackson, Mich.

REPORT OF COMMITTEE.

Three very fine pigs were shown in this ring, out of five entries. The committee gave the prize to a superior Essex barrow, pronouncing him a model for the butcher. His age was 177 days; weight, 207 pounds; average gain per day since birth, 1 16 pounds.

Sow 1 and under 2 years.

No.	Exhibiter.	Age, in days, Nov. 4, 1881.	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
276	F. Willson, Jackson, Mich	525	341	0 64	Brunette	Essex. .. ..
284	Scheidt & Davis, Dyer, Ind	510	501	0 98	Queen Victoria	Victoria .. ..
261	Scheidt & Davis, Dyer, Ind	551	482	0.87	Miss Butterfly	Berkshire ... ...
262	Scheidt & Davis, Dyer, Ind	551	444	0 80	Miss Butterfly II.	“ ...
270	Taylor Bros., Waynesville	371	307	0 82	Beauty	Chester White . .
277	Taylor Bros., Waynesville	431	391	0.90	Sarah.	Essex.... .. ....
266	H. C. Castle, Wilmington .	694	557	0 80	Black Rose	Poland China ...
	Average	519	432	0 83		

Sweepstakes premium, $25, to Sarah, exhibited by Taylor Bros., Waynesville.

REPORT OF COMMITTEE.

The seven animals competing in this ring were all fine specimens. The contest, however, was between an Essex and a Victoria. Both were beauties. The former was awarded the premium, as being somewhat better in shoulder and loin, and the most profitable to butcher and consumer.

Essex Sow, Sarah I, exhibited by Taylor Bros., Waynesville, Ill. Awarded Grand Sweepstakes Premium, Fat Stock Show, 1881.—p 173.

Sow under 1 year.

No.	Exhibiter.	Age, in days, Nov. 4, 1881..........	Weight Nov. 4, 1881..........	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
278	F. Willson, Jackson, Mich..	199	229	1 15	Belle............	Essex............
271	J. A. Brown & Son, Decatur	198	293	1 47	Pet	Chester White.
286	Scheidt & Davis, Dyer, Ind.	341	343	1 00	Duchess..........	Victoria ....
288	Scheidt & Davis, Dyer, Ind.	341	300	0.87	Topsy	" ....
267	H. C. Castle, Wilmington ..	257	328	1.27	Oxford Rose......	Poland ....
268	H. C. Castle, Wilmington ...	234	284	1 21	Augusta 7th......	" ....
289	Taylor Bros., Waynesville .	276	283	1 02	Nellie	Grade Suffolk....
	Average	263	294	1.14		

Sweepstakes premium, $25, to Pet, exhibited by J. A. Brown & Son, Decatur.

REPORT OF COMMITTEE.

This ring was filled with excellent pigs, six in number. The committee gave the award to a very symmetrical pig, evenly and squarely built, with fine bone, light head and jowl, fine in shoulder, loin and ham; age in days, 198; weight, 293 pounds; average gain per day since birth, 1 47 pounds.

LOT 29—GRAND SWEEPSTAKES.

Best Barrow or Sow in the Show.

No.	Exhibiter.	Age, in days, Nov. 4, 1881..........	Weight Nov. 4, 1881..........	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
291	A.J.Thompson, Downer's G.	1,816	505	0.38	Trinket..........	Berkshire ... ...
281	F. Willson, Jackson, Mich .	592	410	0 69	Ben	Grade Suffolk....
271	J. A. Brown & Son, Decatur	198	293	1 47	Pet.............	Chester White..
290	Thos. Bennett, Rossville	504	597	1.18	Muskogee.........	Red Berkshire .
282	Harry Davis, Dyer, Ind	341	325	0.95	Duke	Victoria . ...
284	Scheidt & Davis, Dyer, Ind	510	501	0 98	Queen Victoria.	" ....
261	Scheidt & Davis, Dyer, Ind	551	482	0.87	Miss Butterfly .	Berkshire ... ...
262	Scheidt & Davis, Dyer, Ind.	551	444	0 80	Miss Butterfly II.	" ......
269	Taylor Bros., Waynesville..	431	385	0 89	Jim	Chester White.
277	Taylor Bros., Waynesville..	481	391	0 90	Sarah............	Essex.... ....
263	H. C. Castle, Wilmington .	694	685	0 98	Crown Prince....	Poland. ....
264	H. C. Castle, Wilmington. .	385	433	1.12	Prince Albert 5th	" ....
265	H. C. Castle, Wilmington..	385	444	1 15	Prince Albert 6th	" ... .
266	H. C. Castle, Wilmington.	694	557	0 80	Black Rose	" ... .
267	H. C. Castle, Wilmington...	257	828	1 27	Oxford Rose. ...	" ... .
268	H. C. Castle, Wilmington.	234	284	1 21	Augusta 7th... .	" ....
	Average	505	441	0 98		

Premium, $30, to Sarah, exhibited by Tavlor Bros., Waynesville.

REPORT OF COMMITTEE.

This ring was composed of sixteen of the best swine exhibited at the show. The premium was awarded to the Essex sow that took the premium in her class, the property of Taylor Bros., Waynesville. She was finer in bone than any other competing animal, carrying a finer ham, and equally good in other respects; the most profitable hog for the butcher.

LOT 30—HEAVIEST FAT HOG.

Open to all.

Heaviest Barrow or Sow of any age.

No.	Exhibitor.	Age, in days, Nov. 4, 1881	Weight Nov. 4, 1881	Average gain per day, in pounds, since birth	Name of Animal.	Breed.
291	A.J Thompson, Downer's G.	1,316	505	0 38	Trinket...........	Berkshire ....
290	Thos. Bennett, Rossville...	504	597	1.18	Muskogee.	Red Berkshire. .
293	Scheidt & Davis, Dyer, Ind	1,067	501	0 46	Belle..............	Grade Berkshire.
284	Scheidt & Davis, Dyer, Ind	510	501	0 98	Queen Victoria ..	Victoria ... .
261	Scheidt & Davis, Dyer, Ind	551	482	0 87	Miss Butterfly ...	Berkshire........
292	Taylor Bros., Waynesville..	1,282	698	0 54	Buster	Poland ....
263	H C. Castle, Wilmington.	694	685	0.98	Crown Prince...	" ....
264	H. C. Castle, Wilmington. .	385	433	1 12	Prince Albert 5th	" ....
265	H. C Castle, Wilmington.	385	444	1 15	Prince Albert 6th	" ....
266	H. C. Castle, Wilmington...	694	557	0 80	Black Rose	" ....
	Average	738	540	0 84		

Premium, $50, to Buster, exhibited by Taylor Bros., Waynesville.

CATALOGUE—CLASS D—SWINE.

DAVID GORE *Superintendent*

No of Stall	Name and Postoffice of Exhibiter	Age in days Nov 4 1881	Weight Nov 4 1881	Average gain per day, in pounds since birth	Name of Animal	Breed
5	A J Thompson Downers Grove	1 316	505	0 38	Trinkett	Berkshire
6	Thos Bennett Rossville	504	597	1 18	Muskogee	Red Berkshire
7	Taylor Bros Waynesville	307	232	0 75	Willson	Essex .
7	Taylor Bros Waynesville	431	391	0 90	Sarah	
7	Taylor Bros Waynesville	0	210	0 68	Belle	
8	Taylor Bros Waynesville	270	283	1 05	Nellie	Grade Suffolk
8	Taylor Bros Waynesville	1 282	698	0 54	Buster	Poland
9	H C Castle Wilmington	694	557	0 80	Black Rose	
10	H C Castle Wilmington	694	685	0 98	Crown Prince	
11	H C Castle Wilmington	385	433	1 12	Prince Albert 5th	
11	H C Castle Wilmington	385	444	1 15	Prince Albert 6th	
12	H C Castle Wilmington	257	328	1 27	Oxford Rose	
12	H C Castle Wilmington	234	284	1 21	Augusta 7th	
13	Taylor Bros Waynesville	371	307	0 82	Beauty	Chester
13	Taylor Bros Waynesville	190	200	1 05	Jane	
14	Taylor Bros Waynesville	307	249	0 81	Philip	
15	J A Brown & Son Decatur	198	293	1 47	Pet	
16	Taylor Bros Waynesville	431	385	0 89	Jim	
16	Taylor Bros Waynesville	431	428	0 99	George	Berkshire
35	Frank Willson Jackson Mich	199	229	1 15	Belle	Essex
35	Frank Willson Jackson Mich	199	210	1 05	Mary	
36	Frank Willson Jackson Mich	177	207	1 16	Walter	
36	Frank Willson Jackson Mich	177	198	1 11	Major	
37	Frank Willson Jackson Mich	525	341	0 64	Brunette	
37	Frank Willson Jackson Mich	592	410	0 69	Ben	Grade Suffolk
38	Scheidt & Davis Dyer Ind	551	482	0 87	Miss Butterfly	Berkshire
38	Scheidt & Davis Dyer Ind	551	444	0 80	Miss Butterfly II	
39	Scheidt & Davis Dyer Ind	1 067	501	0 46	Belle	Grade Berkshire
40	Scheidt & Davis Dyer Ind	510	501	0 98	Queen Victoria	Victoria
40	Scheidt & Davis Dyer Ind	510	420	0 82	Fanny Field	
41	Scheidt & Davis Dyer Ind	341	343	1 00	Duchess	
41	Scheidt & Davis Dyer Ind	341	350	1 02	White Lady	
42	Scheidt & Davis Dyer Ind	341	300	0 87	Topsy	
43	Scheidt & Davis Dyer Ind	341	327	0 95	Hector	
43	Harry Davis Dyer Ind	341	325	0 95	Duke	

LIST OF AWARDS.

FOURTH ANNUAL FAT STOCK SHOW,

Chicago, Nov. 7-12, 1881.

CLASS A—CATTLE.

WILLIAM SMITH, *Superintendent*

LOT 1—SHORTHORN—THOROUGHBREDS.

Best Steer 3 and under 4 years—3 entries.

First premium, John B. Sherman, Chicago	$25 00
Second premium, John B. Sherman, Chicago	20 00
Third premium, John B. Sherman, Chicago	10 00

Best Steer 2 and under 3 years—7 entries.

First premium, Morrow & Muir, Clintonville, Ky	30 00
Second premium, Dunlap Bros., Abingdon	20 00
Third premium, H. C. Nelson, Canton	10 00

Best Cow 3 years old or over—4 entries.

First premium, Canada West Farm Stock Association, Brantford, Ont	30 00
Second premium, Nelson Jones, Towanda	20 00
Third premium, J. H. Potts & Son, Jacksonville	10 00

LOT 2—HEREFORDS—THOROUGHBRED.

Best Steer 3 and under 4 years.

First premium, T. L. Miller Co., Beecher	30 00
Second premium, T. L. Miller Co., Beecher	20 00

Best Cow 3 years old or over—3 entries.

First premium, T. E. Miller, Beecher	30 00
Second premium, Thomas Clark, Beecher	20 00
Third premium, T. E. Miller, Beecher	10 00

LOT 3—DEVONS—THOROUGHBRED.

Best Steer 3 and under 4 years—2 entries

First premium, L. Rawson, Oak Creek, Wis	$30 00
Second premium, L. Rawson, Oak Creek, Wis	20 00

Best Steer 2 and under 3 years—3 entries.

First premium, L. Rawson, Oak Creek, Wis	30 00
Second premium, L. Rawson, Oak Creek, Wis	20 00
Third premium, L. Rawson, Oak Creek, Wis	10 00

Best Steer 1 and under 2 years—3 entries.

First premium, L. Rawson, Oak Creek, Wis	30 00
Second premium, L. Rawson, Oak Creek, Wis	20 00
Third premium, L. Rawson, Oak Creek, Wis	10 00

LOT 4—OTHER PURE BEEF BREEDS (not named)—No entries

LOT 5—GRADES OR CROSSES.

Best Steer 3 and under 4 years—34 entries.

First premium, T L. Miller Co , Beecher	30 00
Second premium, Morrow & Muir, Clintonville, Ky	20 00
Third premium, J. D. Gillett, Elkhart	10 00

Best Steer 2 and under 3 years—33 entries.

First premium, T W Hunt, Ashton	30 00
Second premium, J D. Gillett, Elkhart	20 00
Third premium, T. L. Miller Co., Beecher	10 00

Best Steer 1 and under 2 years—5 entries.

First premium, J H. Potts & Son, Jacksonville	30 00
Second premium, T. W Hunt Ashton	20 00
Third premium, G. S. Burleigh, Mechanicsville, Iowa	10 00

Best Cow 3 years old or over—2 entries.

First premium, J. D. Gillett, Elkhart	30 00
Second premium, C. M Culbertson, Chicago	20 00

LOT 6—SWEEPSTAKES RINGS—Open to All.

Best Steer 3 and under 4 years—25 entries.

Premium, J. D. Gillett, Elkhart	50 00

Best Steer 2 and under 3 years—27 entries.

Premium, David Grant, Petersburg	50 00

Best Steer 1 and under 2 years—6 entries.

Premium, J. H. Potts & Son, Jacksonville	50 00

Best Cow 3 years old or over—8 entries.

Premium, Canada West Farm Stock Association, Brantford, Ont	50 00

LOT 7—GRAND SWEEPSTAKES—Open to All

Best Steer or Cow in the Show 30 entries

Premium J D Gillett Elkhart	$100 00

LOT 8—CAR LOADS

Best lot of 8 Cattle 3 and under 4 years old—4 entries

First premium J D Gillett Elkhart	150 00
Second premium Morrow & Muir Clintonville Ky	75 00

Best lot of 10 Cattle 2 and under 3 years old—2 entries

First premium J D Gillett Elkhart	150 00
Second premium H C Nelson Canton	75 00

LOT 9—DRESSED BULLOCKS

Best Carcass of Steer 3 and under 4 years 3 entries

Premium C M Culbertson Chicago	50 00

Best Carcass of Steer 2 and under 3 years—2 entries

Premium David Grant Petersburg	50 00

Best Carcass of Steer 1 and under 2 years 1 entry

Premium G S Burleigh Mechanicsville Iowa	50 00

LOT 10—DRESSED BULLOCKS—SWEEPSTAKES

Best Carcass of Steer of any age—6 entries

Premium C M Culbertson Chicago	75 00

LOT 11—HEAVIEST FAT STEER—Open to All Ages

First premium John B Sherman Chicago	75 00
Second premium James Gains & Son Farm Ridge	50 00
Third premium John B Sherman Chicago	25 00

LOT 12 EARLY MATURITY

Steer showing the greatest average gain per day since birth

Steer 3 and under 4 years—10 entries

First premium J D Gillett Elkhart	50 00
Second premium T L Miller Co Beecher	25 00

Steer 2 and under 3 years—10 entries

First premium J D Gillett Elkhart	50 00
Second premium J D Gillett Elkhart	25 00

Steer 1 and under 2 years—8 entries

First premium J H Potts & Son Jacksonville	50 00
Second premium G S Burleigh Mechanicsville Iowa	25 00

CLASS B—HORSES.

DAVID E. BEATY, *Superintendent.*

LOT 13—HORSES—(13 entries)—No Awards

CLASS C—SHEEP.

E B. DAVID, *Superintendent.*

LOT 14—LONG WOOLS.

Best Wether 2 and under 3 years—5 entries.

First premium, J. A. Brown & Son, Decatur	$12 00
Second premium, M. N. Hood, Guelph, Can.	8 00
Third premium, J. A. Brown & Son, Decatur	5 00

Best Wether 1 and under 2 years—3 entries.

First premium, M. N. Hood, Guelph, Can.	12 00
Second premium, J. A Brown & Son, Decatur	8 00
Third premium, J. A Brown & Son, Decatur	5 00

Best Ewe 2 and under 3 years—1 entry.

First premium, J. A. Brown & Son, Decatur	12 00

Best Ewe 1 and under 2 years—7 entries.

First premium, Frank Willson, Jackson, Mich	12 00
Second premium, Abner Strawn, Ottawa	8 00
Third premium, Morgan & Cotton, Camargo	5 00

Best Ewe under 1 year—5 entries.

First premium, Abner Strawn, Ottawa	12 00
Second premium, Abner Strawn, Ottawa	8 00
Third premium, Abner Strawn, Ottawa	5 00

LOT 15—MIDDLE WOOLS.

Best Wether 2 and under 3 years—7 entries.

First premium, Morgan &Cotton, Camargo	12 00
Second premium, Morgan & Cotton, Camarago	8 00
Third premium, J. H. Potts & Son, Jacksonville	5 00

Best Wether 1 and under 2 years—7 entries.

First premium, Morgan & Cotton, Camargo	12 00
Second premium, J. H. Potts & Son, Jacksonville	8 00
Third premium, M. N. Hood, Guelph, Can	5 00

Best Wether under 1 year.

First premium, J. H. Potts & Son, Jacksonville	12 00
Second premium, J. H. Potts & Son, Jacksonville	8 00

Best Ewe 2 and under 3 years—1 entry.

First premium, J. A. Brown & Son, Decatur	12 00

LOT 16—FINE WOOLS—No Entries

LOT 17—GRADES OR CROSSES

Best Wether 2 and under 3 years—2 entries

First premium Frank Willson Jackson Mich	$2 00
Third premium John Hudson Moawequa	5 00

Best Wether 1 and under 2 years—4 entries

First premium M N Hood Guelph Can	12 00
Second premium M N Hood Guelph Can	8 00
Third premium Frank Willson Jackson Mich	5 00

Best Wether under 1 year

First premium M N Hood Guelph Can	12 00
Second premium M N Hood Guelph Can	8 00
Third premium John Hudson Moawequa	5 00

Best Ewe 2 and under 3 years—1 entry

First premium John Hudson Moawequa	12 00

Best Ewe 1 and under 2 years—4 entries

First premium M N Hood Guelph Can	12 00
Second premium M N Hood Guelph Can	8 00
Third premium M N Hood Guelph Can	5 00

Best Ewe under 1 year—6 entries

First premium M N Hood Guelph Can	12 00
Second premium M N Hood Guelph Can	8 00
Third premium M N Hood Guelph Can	5 00

LOT 18—SWEEPSTAKES

Best Wether 2 and under 3 years—10 entries

Premium Frank Willson Jackson Mich	25 00

Best Wether 1 and under 2 years—9 entries

Premium J H Potts & Son Jacksonville	25 00

Best Wether under 1 year—5 entries

Premium M N Hood Guelph Can	25 00

Best Ewe 2 and under 3 years—3 entries

Premium J A Brown & Son Decatur	25 00

Best Ewe 1 and under 2 years—6 entries

Premium Abner Strawn Ottawa	25 00

Best Ewe under 1 year—8 entries

Premium Abner Strawn Ottawa	25 00

LOT 19—GRAND SWEEPSTAKES

Best Wether or Ewe in the Show—14 entries

Premium Morgan & Cotton Camargo	30 00

LOT 20—HEAVIEST FAT SHEEP

Heaviest Wether or Ewe any age—6 entries

Premium M N Hood Guelph Can	$50 00

LOT 21—CAR LOADS

Best Car-Load 30 Fat Wethers 2 and under 3 years—2 entries

First premium Morrow & Muir Clintonville Ky	60 00
Second premium John Hudson Moawequa	30 00

LOT 22—DRESSED SHEEP—No Entries

SPECIAL PREMIUM $50

New York State Merino Breeders Association 10 Wethers 2 years old or over

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CLASS D—SWINE.

DAVID GORE *Superintendent*

LOT 23 BERKSHIRES

Best Barrow 1 and under 2 years—1 entry	
First premium Taylor Bros Waynesville	$12 00
Best Sow 1 and under 2 years—2 entries	
First premium Scheidt & Davis Dyer Ind	12 00
Second premium Scheidt & Davis Dyer Ind	8 00

LOT 24—POLAND CHINA

Best Barrow 1 and under 2 years—3 entries	
First premium H C Castle Wilmington	12 00
Second premium H C Castle Wilmington	8 00
Third premium H C Castle Wilmington	5 00
Best Sow 1 and under 2 years—1 entry	
First premium H C Castle Wilmington	12 00
Best Sow under 1 year—2 entries	
First premium H C Castle Wilmington	12 00
Second premium H C Castle Wilmington	8 00

LOT 25—CHESTER WHITE

Best Barrow 1 and under 2 years—1 entry	
First premium Taylor Bros Waynesville	12 00
Best Sow 1 and under 2 years—1 entry	
First premium Taylor Bros Waynesville	12 00
Best Sow under 1 year—2 entries	
First premium J A Brown & Son Decatur	12 00

LOT 26—ESSEX

Best Barrow under 1 year—3 entries	
First premium Frank Willson Jackson Mich	12 00
Second premium Taylor Bros Waynesville	8 00
Third premium Frank Willson Jackson Mich	5 00

Best Sow 1 and under 2 years—2 entries	
First premium, Taylor Bros., Waynesville	$12 00
Second premium, Frank Willson, Jackson, Mich	8 00
Best Sow under 1 year—3 entries	
First premium, Frank Willson, Jackson, Mich	12 00
Second premium, Taylor Bros., Waynesville	8 90
Third premium, Frank Willson, Jackson, Mich	5 00

LOT 27—GRADES OR CROSSES

Best Barrow 1 and under 2 years—1 entry	
First premium Frank Willson, Jackson Mich	12 00
Best Barrow under 1 year—2 entries	
First premium, Harry Davis, Dyer, Ind	12 00
Second premium, Scheidt & Davis, Dyer, Ind	8 00
Best Sow 1 and under 2 years—2 entries	
First premium, Scheidt & Davis, Dyer Ind	12 00
Second premium, Scheidt & Davis, Dyer, Ind	8 00
Best Sow under 1 year—4 entries	
First premium, Scheidt & Davis, Dyer Ind	12 00
Second premium Scheidt & Davis, Dyer Ind	8 00
Third premium, Taylor Bros., Waynesville	5 00

LOT 28—SWEEPSTAKES—Open to All

Best Barrow 1 and under 2 years—7 entries	
Premium, Thos. Bennett, Rossville	25 00
Best Barrow under 1 year—5 entries	
Premium, Frank Willson, Jackson Mich	25 00
Best Sow 1 and under 2 years—7 entries	
Premium, Taylor Bros., Waynesville	25 00
Best Sow under 1 year—7 entries	
Premium J A Brown & Son, Decatur	25 00

LOT 29—GRAND SWEEPSTAKES—Open to All.

Best Barrow or Sow in the Show 16 entries	
Premium, Taylor Bros., Waynesville	50 00

LOT 30 HEAVIEST FAT HOG—Open to All.

Heaviest Barrow or Sow, of any age—10 entries	
Premium, Taylor Bros., Waynesville	50 00

LOT 31—CAR-LOADS—No Entries

CLASS E—POULTRY.

H D EMERY, *Superintendent.*

LOT 32—TURKEYS.

Best Turkey Cock, fowl	
First premium Bush & Blodgett Downer's Grove	$3 00
Best Turkey Cock, chick	
First premium, J R Brabazon, Delavan, Wis.	3 00
Best Turkey Hen, fowl	
First premium, Bush & Blodgett, Downer's Grove	3 00
Heaviest Fat Turkey	
Premium, Bush & Blodgett, Downer's Grove	5 00

LOT 33—GEESE

Best Gander, fowl	
First premium, Harry Davis, Dyer, Ind	$3 00
Second premium Bush & Blodgett, Downer's Grove	2 00
Best Gander, chick	
First premium, Harry Davis, Dyer, Ind	3 00
Second premium, Bush & Blodgett, Downer's Grove	2 00
Best Goose, fowl	
First premium, Bush & Blodgett Downer's Grove	3 00
Second premium, Harry Davis, Dyer, Ind	2 00
Best Goose, chick	
First premium, Bush & Blodgett, Downer's Grove	3 00
Heaviest Fat Gander	
Premium, Harry Davis, Dyer, Ind	5 00

LOT 34—DUCKS

Best Drake, fowl:	
First premium Bush & Blodgett, Downer's Grove	3 00
Second premium, J R Brabazon, Delavan, Wis	2 00
Best Drake, chick	
First premium, Bush & Blodgett Downer's Grove	3 00
Second premium, Harry Davis Dyer, Ind	2 00
Best Duck, fowl	
First premium J R Brabazon Delavan, Wis	3 00
Second premium, Bush & Blodgett, Downer's Grove	2 00
Best Duck, chick	
First premium J R Brabazon Delavan Wis	3 00
Second premium, Bush & Blodgett Downer's Grove	2 00
Heaviest Fat Drake	
Premium, Bush & Blodgett Downer's Grove	5 00

LOT 35 ASIATIC FOWLS

Best Cock, fowl	
First premium Harry Davis, Dyer Ind	3 00
Second premium, Bush & Blodgett Downer's Grove	2 00
Best Cock, chick	
First premium, Harry Davis Dyer, Ind	3 00
Second premium, Harry Davis Dyer Ind	2 00
Best Hen fowl	
First premium, Harry Davis Dyer Ind	3 00
Second premium, Bush & Blodgett, Downer's Grove	2 00
Best Hen, chick	
First premium, Harry Davis, Dyer, Ind	3 00
Second premium, Harry Davis, Dyer Ind	2 00
Heaviest Fat Fowl	
Premium, Harry Davis, Dyer, Ind	5 00

LOT 36—ALL OTHER VARIETIES OF FOWLS THAN ASIATICS

Best Cock, fowl—no entry.

Best Cock, chick	
First premium, Bush & Blodgett Downer's Grove	3 00
Best Hen, fowl	
First premium, Bush & Blodgett, Downer's Grove	3 00
Best Hen, chick	
First premium, Bush & Blodgett, Downer's Grove	3 00
Heaviest Fat Fowl	
Premium, Bush & Blodgett, Downer's Grove	5 00

LOT 37—DRESSED POULTRY.

Best Dressed Cock, fowl:	
First premium, Bush & Blodgett, Downer's Grove	$3 00
Second premium, Bush & Blodgett, Downer's Grove	2 00
Best Dressed Cock, chick:	
First premium, Bush & Blodgett, Downer's Grove	3 00
Second premium, Bush & Blodgett, Downer's Grove	2 00
Best Dressed Hen, fowl	
First premium, Bush & Blodgett, Downer's Grove	3 00
Second premium, Bush & Blodgett, Downer's Grove	2 00
Best Dressed Hen, chick:	
First premium, Bush & Blodgett, Downer's Grove	3 00
Second premium, Bush & Blodgett, Downer's Grove	2 00
Heaviest Fat Fowl:	
Premium, Bush & Blodgett, Downer's Grove	5 00

LOT 38—DISPLAYS, ETC.

Best display Live Fat Poultry:	
Premium, Harry Davis, Dyer, Ind	15 00
Best display Dressed Poultry	
Premium, Bush & Blodgett, Downer's Grove	15 00

SECRETARY'S REPORT.

The results of the four Fat Stock Shows are briefly given herewith, for convenience of ready reference, and to enable the reader to critically examine and compare the different rings of the various breeds of stock exhibited at these shows.

The pure breeds and crosses will be reported upon in the order they appear in the classification of premiums.

The averages of the rings, of the several ages of animals and breeds, for the four years, are first given, followed by table giving age, weight and gain of the first premium animals exhibited therein each year.

The excellent results obtained by feeders of the animals exhibited at the first three Fat Stock Shows have been improved upon, in several rings, by the stock exhibited in 1881.

The great interest manifested by some exhibiters in the matter of early maturity has not caused the intelligent feeder to ignore the more essential matter of quality, which has and always will influence the awards of committees. The question of early maturity, other essential qualities being equal, would doubtless influence the award in favor of the animal making the largest average gain per day since birth.

In compiling the following statistics, it has been the purpose of the writer simbly to give the official figures, without comment, leaving the reader free to draw his own inference as to the superior merits of the respective meat breeds of animals exhibited.

The superior quality of butchers' stock exhibited at the Fourth Annual Fat Stock Show has not been approached by the same number of animals previously exhibited.

The matter of quality is deservedly attracting more attention at each succeeding Show, and the fine finish, excellent handling quality, fineness of bone, and other evidences of light offal, and cutting a large proportion of net to gross, was noticeable in the stock, and is frequently mentioned in the reports of awarding committees.

CLASS A—CATTLE.

SHORTHORNS

Shorthorn Steer 4 years old or over

Year	Entries	Average age in days	Average weight	Average gain per day in lbs since birth
1878	2	1 891	2 262	1 19
1879	5	1 861	2 358	1 28

First Premium Animals

Year	Age in days	Weight	Average gain per day in lbs since birth
1878	1 880	2 085	1 11
1879	1 578	2 240	1 42

Shorthorn Steer 3 and under 4 years

Year	Entries	Average age in days	Average weight	Average gain per day in lbs since birth
1878	[illegible]	1 250	2 087	1 67
1879	2	1 326	2 039	1 53
1880	4	1 300	2 172	1 66
1881	3	1 364	2 093	1 53

First Premium Animals

Year	Age in days	Weight	Average gain per day in lbs since birth
1878	1 280	2 115	1 65
1879	1 335	2 060	1 54
1880	1 307	2 350	1 71
1881	1 309	2 150	1 64

Shorthorn Steer 2 and under 3 years

Year	Entries	Average age in days	Average weight	Average gain per day in lbs since birth
1878	5	934	1 621	1 73
1879	3	871	1 624	1 86
1880	5	942	1 801	1 92
1881	7	963	1 634	1 69

First Premium Animals

Year	Age in days	Weight	Average gain per day in lbs since birth
1878	969	1 705	1 76
1879	845	1 636	1 93
1880	1 064	1 815	1 70
1881	1 085	1 895	1 74

Shorthorn Steer 1 and under 2 years

Year	Entries	Average age in days	Average weight	Average gain per day in lbs since birth
1878	3	672	1 385	2 06
1879	5	638	1 267	2 00
1880	1	721	1 590	2 20
1881				

First Premium Animals

Year	Age in days	Weight	Average gain per day in lbs since birth
1878	650	1 480	2 28
1879	701	1 316	1 87
1880	721	1 590	2 20
1881			

Shorthorn Cow 3 years old or over

Year	Entries	Average age in days	Average weight	Average gain per day in lbs since birth
1878	6	2 937	1 722	0 72
1879	8	2 304	1 786	0 81
1880	3	3 031	1 618	0 59
1881	4	2 100	1 756	0 83

First Premium Animals

Year	Age in days	Weight	Average gain per day in lbs since birth
1878	1 721	2 075	1 20
1879	2 035	1 769	0 86
1880	2 136	1 710	0 80
1881	1 873	1 875	1 00

HEREFORDS

Hereford Steer 4 years old or over

Year	Entries	Average age in days	Average weight	Average gain per day in lbs since birth
1878	1	2 692	2 010	0 75
1879	4	1 639	1 994	1 28

First Premium Animals

Year	Age in days	Weight	Average gain per day in lbs since birth
1878	2 692	2 010	0 75
1879	1 677	2 043	1 22

Hereford Steer 3 and under 4 years

Year	Entries	Average age in days	Average weight	Average gain per day in lbs since birth
1878	3	1 310	1 735	1 26
1879	2	1 380	1 9[illegible]3	1 41
1880	1	1 183	1 875	1 58
1881	2	1 233	1 947	1 57

First Premium Animals

Year	Age in days	Weight	Average gain per day in lbs since birth
1878	1 330	1 705	1 20
1879	1 350	1 968	1 44
1880	1 183	1 875	1 58
1881	1 224	1 965	1 60

Hereford Steer 2 and under 3 years

Year	Entries	Average age in days	Average weight	Average gain per day in lbs since birth
1878	1	1 080	1 470	1 36
1879	1	939	1 474	1 57
1880	3	943	1 738	1 85
1881				

First Premium Animals

Year	Age in days	Weight	Average gain per day in lbs since birth
1878	1 080	1 470	1 36
1879	939	1 474	1 57
1880	866	1 650	1 91
1881			

Hereford Steer 1 and under 2 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878				
1879	3	577	1,230	2 15
1880	1	710	1,115	1.57
1881				

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs since birth.
1878			
1879	712	1,397	1 96
1880	710	1,115	1 57
1881			

Hereford Cow 3 years old or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	3	2,179	1,630	0 78
1879	2	3,663	1,615	0 56
1880	1	1,350	1,720	1 27
1881	3	1,782	1,435	0 82

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs since birth
1878	1,677	1,595	0 95
1879	2,018	1,730	0 85
1880	1,350	1,720	1 27
1881	2,243	1,560	0 69

DEVONS.

Devon Steer 4 years or over.

Year.	Entries.	Average age in days	Average weight.	Average gain per day in lbs. since birth.
1878	2	655	1,757	1 06
1879				

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	1,658	1,645	0 99
1879			

Devon Steer 3 and under 4 years.

Year	Entrios.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	2	1,319	1,565	1.18
1879	1	1,335	1,509	1 12
1880	2	1,330	1,220	0 93
1881	2	1,298	1,152	0.88

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	1,371	1,655	1 21
1879	1,335	1,509	1 12
1880	1,335	1,270	0 91
1881	1,268	1,075	0 84

Devon Steer 2 and under 3 years.

Year.	Entries.	Average age in days.	Weight.	Average gain per day in lbs. since birth.
1878				
1879				
1880	1	849	1,250	1 46
1881	3	926	977	1 05

First Premium Animals.

Year.	Age in days	Weight	Average gain per day in lbs. since birth.
1878			
1879			
1880	849	1,250	1 46
1881	969	975	1 00

Devon Steer 1 and under 2 years.

Year.	Entries	Average age in days.	Average weight	Average gain per day in lbs. since birth.
1878				
1879	1	483	814	1 74
1880				
1881	3	609	792	1 30

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878			
1879	483	844	1 74
1880			
1881	614	835	1 36

Devon Cow 3 years old or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	1	1,905	1,200	0 63
1879	2	2,475	1,115	0 51
1880				
1881				

First Premium Animals.

Year.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878*			
1879	3,490	1,264	0 36
1880			
1881			

* No premium awarded in 1878.

GRADES OR CROSSES.

Steer 4 years or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	12	1,815	2,491	1 37
1879	17	1,923	2,373	1 25

1878—11 Grade Shorthorns, 1 Grade Hereford
1879—15 Grade Shorthorns, 1 Grade Hereford, 1 Grade Devon.

First Premium Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	2,058	2,480	1 20
1879	Grade Hereford	1,780	2,134	1 19

Grades or Crosses—Steer 3 and under 4 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	10	1,296	2,032	1 56
1879	29	1,262	1,946	1 18
1880	18	1,267	1,924	1 54
1881	34	1,259	1,943	1 54

1878—9 Grade Shorthorns; 1 Grade Hereford.
1879—20 Grade Shorthorns; 7 Grade Herefords; 2 Grade Devons.
1880—16 Grade Shorthorns, 2 Grade Herefords.
1881—29 Grade Shorthorns, 5 Grade Herefords.

First Premium Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	1,328	2,185	1.65
1879	Grade Shorthorn	1,294	1,986	1.53
1880	Grade Shorthorn	1,411	2,030	1.44
1881	Grade Hereford	1,190	2,145	1.80

Grades or Crosses—Steer 2 and under 3 years.

Year.	Entries.	Average age in days.	Average Weight.	Average gain per day in lbs. since birth.
1878	13	935	1,651	1.73
1879	21	954	1,710	1.77
1880	20	904	1,721	1.89
1881	33	955	1,625	1.70

1878—11 Grade Shorthorns 2 Grade Herefords.
1879—31 Grade Shorthorns
1880—16 Grade Shorthorns 4 Grade Herefords
1881—28 Grade Shorthorns 4 Grade Herefords, 1 Hereford and Shorthorn.

First Premium Animals

Year.	Breed.	Age in days	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	962	1,885	1.96
1879	Grade Shorthorn	932	1,532	1.64
1880	Grade Shorthorn	940	1,900	2.02
1881	Grade Shorthorn	1,045	1,765	1.68

Grades or Crosses—Steer 1 and under 2 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs since birth
1878.	2	678	1,470	2.16
1879.	14	538	1,307	2.42
1880.	22	590	1,290	2.20
1881.	5	665	1,288	1.93

1878—2 Grade Shorthorns.
1879—14 Grade Shorthorns.
1880—18 Grade Shorthorns, 3 Grade Herefords; 1 Grade Devon.
1881—3 Grade Shorthorns; 2 Grade Herefords.

First Premium Animals.

Year.	Breed	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878.	Grade Shorthorn	656	1,420	2.15
1879.	Grade Shorthorn	605	1,196	1.97
1880.	Grade Shorthorn	671	1,395	2.07
1881.	Grade Shorthorn	719	1,565	2.17

Grades or Crosses—Cow 3 years old or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878				
1879				
1880	1	4,225	1,770	0 41
1881	2	1,663	1,722	1.06

1880—1 Grade Shorthorn.
1881—1 Grade Shorthorn; 1 Grade Hereford.

First Premium Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs since birth.
1878				
1879				
1880	Grade Shorthorn	4,225	1,770	0 41
1881	Grade Shorthorn	1,268	1,520	1 19

SWEEPSTAKES.

OPEN TO ALL.

Steer 4 years old or over.

Year.	Entries	Average age in days	Average weight.	Average gain per day in lbs since birth.
1878	14	1,896	2,405	1 28
1879	19	1,782	2,330	1 31

1878—2 Shorthorns; 9 Grade Shorthorns; 1 Hereford; 1 Grade Hereford, 1 Devon.
1879—5 Shorthorns; 11 Grade Shorthorns; 2 Herefords, 1 Grade Hereford.

Sweepstakes Animals.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	Shorthorn	1,902	2,440	1 28
1879	Grade Shorthorn	1,573	2,118	1 34

Sweepstakes (open to all) Steer 3 and under 4 years.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	8	1,229	2,031	1.55
1879	19	1,281	1,965	1.51
1880	18	1,269	1,885	1.49
1881	25	1,263	1,961	1.55

1878—7 Grade Shorthorns; 1 Grade Hereford.
1879—2 Shorthorns; 10 Grade Shorthorns, 2 Herefords; 3 Grade Herefords; 2 Grade Devons.
1880—4 Shorthorns; 8 Grade Shorthorns; 1 Hereford; 3 Grade Herefords; 2 Devons.
1881—19 Grade Shorthorns; 2 Herefords; 4 Grade Herefords.

Sweepstakes Animals.

Year.	Breed.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	1,328	2,185	1.65
1879	Shorthorn	1,335	2,060	1.54
1880	Grade Hereford	1,310	1,875	1.43
1881	Grade Shorthorn	1,237	2,095	1.69

Sweepstakes (open to all) Steer 2 and under 3 years.

Year.	Entries.	Average age in days.	Average weight	Average gain per day in lbs. since birth.
1878.	13	935	1,651	1 73
1879.	21	953	1,705	1.78
1880.	22	915	1,752	1 91
1881.	27	983	1,672	1 70

1878—5 Shorthorns, 6 Grade Shorthorns, 2 Grade Herefords.
1879—3 Shorthorns, 17 Grade Shorthorns; 1 Hereford
1880—5 Shorthorns, 9 Grade Shorthorns, 3 Herefords, 4 Grade Herefords; 1 Devon.
1881—6 Shorthorns; 15 Grade Shorthorns, 4 Grade Herefords, 1 Hereford and Shorthorn; 1 Devon.

Sweepstakes Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878.	Grade Shorthorn	962	1,625	1 69
1879.	Grade Shorthorn	932	1,532	1 64
1880.	Grade Hereford	832	1,845	2 21
1881.	Grade Shorthorn	880	1,500	1 70

Sweepstakes (open to all) Steer 1 and under 2 years

Year.	Entries	Average age in days	Average weight	Average gain per day in lbs. since birth.
1878.	5	674	1,419	2 10
1879.	14	572	1,276	2 25
1880.	15	647	1,376	2 13
1881.	6	656	1,212	1 84

1878—3 Shorthorns, 2 Grade Shorthorns.
1879—4 Shorthorns, 7 Grade Shorthorns; 2 Herefords; 1 Grade Hereford.
1880—1 Shorthorn; 9 Grade Shorthorns, 1 Hereford; 1 Grade Hereford; 1 Grade Devon; 2 Shorthorn and Hereford.
1881—3 Grade Shorthorns, 2 Grade Herefords; 1 Devon.

Sweepstakes Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Shorthorn	650	1,480	2.28
1879	Grade Shorthorn	544	1,300	2 39
1880	Grade Hereford	696	1,580	2.27
1881	Grade Shorthorn	719	1,565	2.17

Sweepstakes (open to all) Cow 3 years old or over.

Year.	Entries.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878.	6	2,282	1,720	0 85
1879.	10	2,442	1,728	0 77
1880.	5	2,934	1,669	0 68
1881.	8	1,891	1,659	0 89

1878—4 Shorthorns, 2 Herefords.
1879—8 Shorthorns; 1 Hereford; 1 Devon.
1880—3 Shorthorns, 1 Grade Shorthorn; 1 Hereford.
1881—3 Shorthorns; 1 Grade Shorthorn, 3 Herefords; 1 Grade Hereford.

Sweepstakes Animals.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Hereford	1,677	1,595	0 95
1879	Shorthorn	2,035	1,769	0 86
1880	Shorthorn	2,136	1,710	0 80
1881	Shorthorn	1,873	1,875	1 00

GRAND SWEEPSTAKES ANIMALS.

Year.	Breed	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	1,328	2,185	1 65
1879	Grade Shorthorn	1,335	2,060	1 54
1880	Grade Shorthorn	1,701	2,465	1 44
1881	Grade Shorthorn	1,237	2,095	1 69

Car-loads, 4 years old or over.

Year.	No Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	10	1,534	2,245	1 48
1879	6	2,155	2,399	1 13
1879	6	1,599	2,147	1 34
Average		1,764	2,264	1 32

1878—First car, 6 Shorthorns and 4 Grade Shorthorns.
1879—Second car, 2 Shorthorns and 4 Grade Shorthorns.
1879—Third car, 6 Grade Shorthorns.

First Premium Car-Loads.

Year.	No. Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	10	1,539	2,245	1 48
1879	6	1,599	2,147	1.34

Car-loads, 3 and under 4 years.

Year.	No. Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	10	1,394	2,047	1 48
1879	8	1,247	2,017	1 55
1879	8	1,261	2,030	1 59
1879	8	1,280	1,868	1.45
1880	8	1,285	1,922	1 49
1880	8	1,255	1,985	1 56
1881	8	1,267	2,048	1 61
1881	8	1,291	1,957	1 52
1881	8	1,290	1,985	1 54
1881	8	1,266	1,925	1 52
Average	8	1,283	1,978	1 53

No. 1, 10 Grade Shorthorns; No. 2, 8 Grade Shorthorns; No. 3, 8 Grade Shorthorns; No. 4, 1 Hereford, 7 Grade Herefords; No. 5, 8 Grade Shorthorns; No. 6, 8 Grade Shorthorns; No. 7, 8 Grade Shorthorns; No. 8, 8 Grade Shorthorns; No. 9, 5 Shorthorns, 3 Grade Shorthorns; No. 10, 8 Grade Shorthorns.

First Premium Car-loads.

Year.	No. Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	10	1,394	2,047	1.48
1879	8	1,247	2,017	1 55
1880	8	1,255	1,985	1 56
1881	8	1,267	2,048	1.61

Car-loads, 2 and under 3 years.

Car....	Year.	No. Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1	1878	10	1,025	1,667	1 63
2	1878	10	1,102	1,759	1 60
3	1879	10	965	1,818	1 87
4	1879	10	918	1,695	1 77
5	1879	10	945	1,648	1 74
6	1880	10	925	1,705	1 84
7	1881	10	905	1,726	1 91
8	1881	10	934	1,475	1 58
	Average	10	965	1,686	1.74

First car, 10 Grade Shorthorns; second car, 10 Grade Shorthorns; third car, 10 Grade Shorthorns, fourth car, 10 Grade Shorthorns; fifth car, 1 Shorthorn and 9 Grade Shorthorns; sixth car, 10 Grade Shorthorns, seventh car, 10 Grade Shorthorns, eighth car, 2 Shorthorns, 8 Grade Shorthorns

First Premium Car-loads.

Year.	No. Steers	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878	10	1,025	1,667	1.63
1879	10	965	1,818	1 87
1880	10	925	1,705	1.84
1881	10	905	1,726	1.91

Car-loads, 1 and under 2 years.

Year.	No. Steers.	Average age in days.	Average weight.	Average gain per day in lbs. since birth.
1878				
1879	12	541	1,313	2 42
1880	13	549	1,187	2 20
1881				
Average		545	1,250	2 31

1879—12 head Grade Shorthorn steers. 1880—12 head Grade Shorthorn steers.

Heaviest Fat Steer.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	2,162	3,155	1.45
1879	Grade Shorthorn	2,403	2,840	1 18
1880	Grade Shorthorn	2,705	3,130	1 13
1881	Grade Shorthorn	1,633	2,435	1.49

EARLY MATURITY.

STEERS SHOWING MOST RAPID GROWTH.

Steer 4 years old or over.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	1,663	2,605	1 56
1879	Grade Shorthorn	1,613	2,820	1 74

Steer 3 and under 4 years.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Grade Shorthorn	1,298	2,305	1 70
1879	Grade Shorthorn	1,269	2,307	1 81
1880	Grade Shorthorn	1,250	2,215	1 77
1881	Grade Shorthorn	1,176	2,130	1 81

Steer 2 and under 3 years.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Shorthorn	783	1,585	2 02
1879	Grade Shorthorn	977	2,081	2.12
1880	Grade Hereford	832	1,845	2 21
1881	Grade Shorthorn	872	1,935	2 21

Steer 1 and under 2 years.

Year.	Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
1878	Shorthorn	650	1,480	2 28
1879	Grade Shorthorn	513	1,373	2 67
1880	Grade Shorthorn	585	1,450	2.47
1881	Grade Shorthorn	719	1,565	2 17

COMPARISON FIRST PRIZE ANIMALS OF THE SEVERAL BREEDS OF CATTLE—EXHIBITED IN 1881.

Steers 3 and under 4 years.

Breed	Age in days.	Weight.	Average gain per day in lbs. since birth.
Shorthorn	1,309	2,150	1 64
Hereford	1,224	1,965	1.60
Devon	1,268	1,075	0.84
Grades or Crosses	1,190	2,145	1.80

Steers 2 and under 3 years.

Breed	Age in days.	Weight.	Average gain per day in lbs. since birth.
Shorthorn	1,085	1,895	1 74
Hereford			
Devon	969	975	1 00
Grades or Crosses	1,045	1,765	1 68

Steers 1 and under 2 years.

Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
Shorthorn			
Hereford			
Devon	614	835	1 36
Grades or Crosses	719	1,565	2 17

Cows 3 years old or over.

Breed.	Age in days.	Weight.	Average gain per day in lbs. since birth.
Shorthorn	1,873	1,875	1.00
Hereford	2,243	1,560	0.69
Devon			
Grades or Crosses	1,268	1,520	1.19

DRESSED BULLOCKS.

Steers 3 and under 4 years.

Name of Steer.	Breed.	Weight at home	Live weight at slaughter	Weight dressed carcass	Per cent. net carcass to gross weight	Weight, carcass, hide and tallow	Per ct. profitable wt., carcass, hide and tallow, to gr. or live wt	Tallow	Hide	Left fore quarter	Right fore quarter	Left hind quarter	Right hind quarter
Broad Horns	Grade Hereford	1,900	1,830	1,227½	67 076	1,399	76 448	68½	103	345	340	277½	265
Cloud	Grade Shorthorn	2,015	1,940	1,295	66 752	1,508	77 731	114	99	352½	345	302½	295
Quid	Grade Shorthorn	1,850	1,770	1,177½	66 526	1,354	76 497	93	83½	315	330	275	257½
1881	Average 3 steers	1,922	1,846	1,233	66 784	1,420	76 892	92	95	337	338	285	272
1880	Average 3 steers	1,790	1,725	1,181⅓	68.49	1,453	84 25	171	100⅔	314½	307⅔	275	284
1879	Average 3 steers	....	1,790	1,183	66.06	1,456	81 34	177	97	318	310	282	272

FIRST PREMIUM ANIMALS.

Name of Steer.	Breed.	Weight at home	Live weight at slaughter	Weight dressed carcass	Per cent. net carcass to gross weight	Weight, carcass, hide and tallow	Per ct. profitable wt., carcass, hide and tallow, to gr. or live wt	Tallow	Hide	Left fore quarter	Right fore quarter	Left hind quarter	Right hind quarter
1881	Grade Hereford	1,900	1,830	1,227½	67 076	1,399	76 448	68½	103	345	340	277½	265
1880	Grade Hereford	1,910	1,850	1,250½	67 59	1,545½	83 51	184	111	327½	318	295	310
1879	Hereford	....	1,963	1,317	67 09	1,618	82 42	195	106	371	354	305	287

DRESSED BULLOCKS—*Continued.*

Steers 3 and under 4 years.

Name of Steer.	Breed.	Head	Feet	Paunch	Guts	Liver	Heart	Tongue	Lungs	Hide trimmings	Blood	Shrinkage	Per cent. of offal to live weight
Broad Horns	Grade Hereford	36½	19	138	55½	15	6½	13	24½	10	41	72	23 552
Cloud	Grade Shorthorn	35	22½	153	66	21	7½	10½	22	10½	46	38	22 269
Quid	Grade Shorthorn	32½	20½	156	47½	15	6½	10½	19	12½	36	60	23 503
1881	Average 3 steers	34	21	149	56	17	6⅞	11⅓	22	11	41	56	23.108
1880	Average 3 steers	30⅔	18										
1879	Average 3 steers	50											

FIRST PREMIUM ANIMALS.

Name of Steer.	Breed.	Head	Feet	Paunch	Guts	Liver	Heart	Tongue	Lungs	Hide trimmings	Blood	Shrinkage	Per cent. of offal to live weight
1881	Grade Hereford	36½	19	138	55½	15	6½	13	24½	10	41	72	23.552
1880	Grade Hereford	32½	18½										
1879	Hereford	55	19										

DRESSED BULLOCKS.

Steer 2 and under 3 years.

Name of Steer.	Breed.	Weight at home......	Live weight at slaughter............	Weight dressed carcass	Per cent. net carcass to gross weight......	Weight carcass, hide and tallow.......... .	Per ct. profitable wt. carcass, hide and tallow, to gr. or live wt.	Tallow.......	Hide..................	Left fore quarter....	Right fore quartor ..	Left hind quarter....	Right hind quarter...
Ab. Pratt.......................	Grade Hereford	*1 675	*1,675	1,092½	65 223	1,311	78 268	125½	93	290	285	265	252½
Echerd..........................	Grade Shorthorn	1,516	1,460	977½	66 952	1,145	78 424	81	87	267½	242½	232½	235
1881................................	Average 2 steers	1,595	1,567	1,035	66 087	1,228	78 346	103	90	273	263	248	243
1880................................	Average 2 steers..........	1,606	1,534	1,012	66.000	1,255	81 84	152½	90¼	266¼	263	242	241
FIRST PREMIUM ANIMALS.													
1881................................	Grade Shorthorn.....	1,516	1,460	977½	66 952	1,145	78.424	81	87	267½	242½	232½	235
1880................................	Grade Shorthorn.............	1,560	1,461	974⅓	66 70	1,209½	82 78	145	90	260	253½	227½	233½
Steer 1 and under 2 years.													
1881—Bailey	Grade Hereford...	1,280	1,197	730	60 985	883	73 767	70	83	195	185	175	175
1880—Monroe......................	Hereford and Shorthorn.....	1,265	1,217	816½	67 09	1,021½	83 93	121	84	206	203½	203½	203½

* Live weight November 4, 1881.

DRESSED BULLOCKS—*Continued*

Steers 2 and under 3 years.

Name of Steer.	Breed.	Head	Feet	Paunch	Guts	Liver	Heart.	Tongue.	Lungs	Hide trimmings	Blood.	Shrinkage	Per cent of offal to live weight
Ab Pratt	Grade Hereford	34	18½	128	51½	12	5	9	18½	17	44½	26	21 732
Echerd	Grade Shorthorn	37	18	94½	40½	12½	5½	9½	16	6	44½	31	21 576
1881	Average 2 steers	35	18¼	111¼	46	12¼	5¼	9¼	17¼	11½	44½	28½	21 654
1880	Average 2 steers	28	18	......	... ...	......	... ...	... ...	... ...	......	......	......	......

FIRST PREMIUM ANIMALS.

Name of Steer.	Breed.	Head	Feet	Paunch	Guts	Liver	Heart.	Tongue.	Lungs	Hide trimmings	Blood.	Shrinkage	Per cent of offal to live weight
1881	Grade Shorthorn	37	18	94½	40½	12½	5½	9½	16	6	44½	31	21 576
1880	Grade Shorthorn	28	20	......	... ...	......	... ...	......	... ...	... ..	... ...	... ..	17 22

Steers 1 and under 2 years.

Name of Steer.	Breed.	Head	Feet	Paunch	Guts	Liver	Heart.	Tongue.	Lungs	Hide trimmings	Blood.	Shrinkage	Per cent of offal to live weight
1881—Bailey	Grade Hereford	38	15½	87	37	13	5	8½	17	17	51½	25	26 233
1880—Monroe	Hereford and Shorthorn	23	15	... ...	......	... ..	... ...	......	......	......	......	.. ....	16.07

EXHIBIT FAT STEERS,

ILLINOIS INDUSTRIAL UNIVERSITY.

The seven steers fed and exhibited by the University attracted much attention, and afforded an excellent opportunity for critically comparing the several breeds and their crosses that, for a considerable time, had received the same feed and care.

The difficulty in selecting, for a satisfactory experiment, animals of the several breeds and crosses, of near the same age and proportion of improved blood, is apparent, and due consideration will be made therefor.

The steers were slaughtered under the supervision of the Board, and the committee of experts appointed to pass upon the dressed carcasses unanimously voted, in the matter of quality, to place the honors as follows:

1st—Oscar, Grade Shorthorn;
2d—Jack, Ayrshire;
3d—May Duke, Devon;
4th—Thomas, Grade Devon;
5th—Junior, Grade Hereford;
6th—Ezra, Shorthorn;
7th—Burnham, Grade Hereford.

Exhibit Fat Steers, by the Illinois Industrial University.

Name.	Breed.	Age in days	Average gain per day since birth	Weight at home	Live weight at slaughter	Weight dressed carcass	Per ct. net carcass to to gross weight	Weight carcass, hide and tallow	Per ct profi'ble weight carcass, hide & tallow to gross or live weight	Weight tallow	Weight hide	Left fore quarter	Right fore quarter	Left hind quarter	Right hind quarter	Head	Feet	Paunch	Guts	Liver	Heart	Tongue	Lungs	Blood	Shrinkage
Ezra	Shorthorn	947	1 58	1,500	1,400	880	62 857	1,046	74 714	76	90	232	235	207	206	32	20	144	64	14	5½	8	18	41	38
Oscar	Grade Shorthorn	978	1 46	1,430	1,300	815	62 692	960	73 846	58	87	212	208	198	197	28½	19	133	48	15	5½	8	12½	31	39
Junior	Grade Hereford	806	1 65	1,335	1,250	750	60 000	894	71 520	56	88	197	198	179	176	30	19	134	63	15	5	8	12	33½	37
Burnham	Grade Hereford	1,129	1 47	1,670	1,545	965	62 459	1,151	74 498	88	98	255	255	228	227	35½	21½	139	68	13½	5½	9	14	35	53
Thomas	⅞ Devon	978	1 33	1,310	1,175	707	60 170	846½	72 042	56½	83	188	186	167	166	31½	27	131½	42½	11	5	7½	12	34	36
May Duke	⅞ Devon	917	1.22	1,215	1,135	679	59 823	811	71 453	55	77	182	183	156	156	30½	14½	118	54	8	6	8	11	33	41
Jack	Ayrshire	1,004	1 29	1,305	1,220	733	60 082	886	72 622	71	82	192	194	173	174	27½	16	134	39	16	5	7½	16	34	39

Average weights of the rings of the various breeds of Cattle and their crosses exhibited at the 1878 1879 1880 and 1881 Fat Stock Shows

Breeds	Steer 4 years old or over	Steer 3 years old and under 4 years	Steer 2 years old and under 3 years	Steer 1 year old and under 2 years	Cow 3 years old or over
Shorthorn 1878	2 262	2 087	1 621	1 385	1 723
Shorthorn 1879	2 358	2 039	1 624	1 267	1 786
Shorthorn, 1880		2 172	1 801	1 590	1 618
Shorthorn, 1881		2 093	1 634		1 756
Average	2 310	2 098	1 670	1 414	1 721
Hereford 1878	2 010	1 735	1 470		1 630
Hereford 1879	1 994	1 973	1 474	1 230	1 615
Hereford 1880		1 875	1 738	1 115	1 720
Hereford 1881		1 947			1 455
Average	2 002	1 882	1 560	1 172	1 600
Devon 1878	1 757	1 565			1 200
Devon 1879		1 509		844	1 115
Devon 1880		1 220	1 250		
Devon 1881		1 152	977	792	
Average	1 757	1 361	1 113	818	1 157
Grades or Crosses 1878	2 491	2 032	1 650	1 470	
Grades or Crosses 1879	2 373	1 916	1 710	1 307	
Grades or Crosses 1880		1 924	1 721	1 290	1 770
Grades or Crosses 1881		1 943	1 675	1 288	1 722
Average	2 432	1 961	1 676	1 339	1 746

Consolidated average weights of the rings of the various breeds of Cattle and their crosses exhibited in 1878 1879 1880 and 1881

Shorthorn	2 310	2 098	1 670	1 414	1 721
Hereford	2 002	1 882	1 560	1 172	1 600
Devon	1 757	1 361	1 113	818	1 157
Grades or Crosses	2 432	1 961	1 676	1 339	1 746

EARLY MATURITY.

From the foregoing table, giving the consolidated average weights of all the cattle of the several breeds of different ages exhibited at the Fat Stock Shows of 1878, 1879, 1880 and 1881, the following table is prepared.

It is generally conceded that the best obtainable specimens of the several beef breeds have been exhibited at these shows, and until the results are changed at future shows, the public may find the following table of some value in determining the comparative feeding qualities as far as early maturity is concerned.

In the following table it will be seen that the Shorthorns have made the most rapid growth, and the weights of this breed, as given above, will be represented by one hundred as a basis for determining by percentage the comparative weights of the different breeds of cattle of same ages exhibited at the four exhibitions of fat stock:

Breed.	Steer 3 years old and under 4 years......	Steer 2 years old and under 3 years......	Steer 1 year old and under 2 years......	Cow 3 years old or over..
Shorthorn	100	100	100	100
Hereford	89	93	82	93
Devon	64	66	57	67
Grades or Crosses	93	100+	94	100+

CLASS C—SHEEP.

Average weights in the rings of the various breeds of Sheep and their crosses, exhibited at the 1878, 1879, 1880 and 1881 Fat Stock Shows

Breed.	Wether 2 years old or over.	Wether 1 and under 2 years old............	Wether under 1 year old ...	Ewe 2 years old or over.	Ewe 1 and under 2 years ..	Ewe under 1 year old......
Cotswold, 1878		224		306		130
Cotswold, 1879	243	194	150	270	228	132
Cotswold, 1880	236	196	114	271		
Cotswold, 1881	251	191		244	226	121
Average	243	202	132	273	227	128
Other Long Wools, 1878						
Other Long Wools, 1879	266					113
Other Long Wools, 1880	281					111
Other Long Wools, 1881						
Average	274					112
Southdown, 1878						
Southdown, 1879	178	160	94	171	128	100
Southdown, 1880	219	166	107	173	132	95
Southdown, 1881	195	157	193			
Average	197	161	131	172	130	97
Other Middle Wools, 1878						
Other Middle Wools, 1879	213			213	185	
Other Middle Wools, 1880		184			199	89
Other Middle Wools, 1881	226	181		220		
Average	219	182		216	192	89
American Merino, 1878						
American Merino, 1879						
American Merino, 1880	139	112	75	99	78	
American Merino, 1881						
Average	139	112	75	99	78	
Other Fine Wools, 1878						
Other Fine Wools, 1879						
Other Fine Wools, 1880						
Other Fine Wools, 1881						
Average						

Class C—Sheep—Continued.

Breed.	Wether 2 years old or over .	Wether 1 and under 2 years old........	Wether under 1 year old	Ewe 2 years old or over ..	Ewe 1 and under 2 years .	Ewe under 1 year old.....
Grades or Crosses, 1878	......	......	......	......	......	......
Grades or Crosses, 1879	213	177	128	215	160	125
Graaes or Crosses, 1880	219	217	118	232	171	118
Grades or Crosses, 1881	231	169	117	164	164	104
Average	221	187	121	204	165	116

Consolidated average weights of the rings of the various breeds of Sheep and their crosses, exhibited in 1878, 1879, 1880 and 1881

Cotswold	233	202	132	273	227	128
Other Long Wools	274	......	......	......	......	112
Southdown	197	161	131	172	130	97
Other Middle Wools	219	182	......	216	192	89
American Merino	139	112	75	99	78	......
Other Fine Wools	......	......	......	......	......	......
Grades or Crosses	221	187	121	204	165	116

CLASS D—SWINE.

Average weights of the rings of the various breeds of hogs and their crosses, exhibited at the 1878, 1879, 1880 and 1881 Fat Stock Shows.

Breed.	Barrow 2 years old or over	Barrow 1 and under 2 years.	Barrow under 1 yr and over 6 months ...	Barrow under 6 months ...	Sow 2 years old or over.	Sow 1 and under 2 yrs. old.	Sow under 1 year and over 6 months	Sow under 6 months .....
Berkshire, 1878	......	......	......	......	......	452	......	......
Berkshire, 1879	......	469	......	190	635	510	351	162
Berkshire, 1880	......	......	......	......	......	446	......	......
Berkshire, 1881	......	428	......	......	......	463	......	......
Average	......	448	......	190	635	468	351	162
Poland China, 1878	651	501	379	192	577	......	......	203
Poland China, 1879	745	521	330	193	624	484	339	147
Poland China, 1880	......	490	272	......	......	445	263	......
Poland China, 1881	......	520	......	......	......	557	306	......
Average	698	508	327	192	600	495	302	175
Chester White, 1878	644	......	......	......	......	......	......	......
Chester White, 1879	......	......	......	......	......	......	......	......
Chester White, 1880	......	248	......	......	......	381	287	......
Chester White, 1881	......	385	......	......	......	307	246	......
Average	644	316	......	......	......	344	266	......
Other Large Breeds, 1878	......	......	......	......	......	......	......	......
Other Large Breeds, 1879	......	......	......	......	......	......	......	......
Other Large Breeds, 1880	......	......	......	......	......	......	......	......
Other Large Breeds, 1881	......	......	......	......	......	......	......	......
Average	......	......	......	......	......	......	......	......

Class D—Swine—Continued.

Breed	Barrow 2 years old or over	Barrow 1 and under 2 years	Barrow under 1 yr and over 6 months	Barrow under 6 months	Sow 2 years old or over	Sow 1 and under 2 yrs old	Sow under 1 year and over 6 months	Sow under 6 months
Essex 1878						470		
Essex 1879	472	295		162	440	276	317	153
Essex 1880								
Essex 1881				212		366	216	
Average	472	295		187	440	371	266	153
Other Small Breeds 1878								
Other Small Breeds 1879						410	370	
Other Small Breeds 1880								
Other Small Breeds 1881								
Average						410	370	
Grades or Crosses 1878		522	298					
Grades or Crosses 1879	589	436	361		620	478	365	
Grades or Crosses 1880		490	350			306	353	
Grades or Crosses 1881		410	326			460	319	
Average	589	464	334		620	414	346	

Consolidated average weights of the rings of the various breeds of Hogs and their crosses exhibited in 1878 1879 1880 and 1881

Berkshire		448		190	635	468	351	162
Poland China	698	508	327	192	600	495	302	175
Chester White	644	316				344	266	
Other Large Breeds								
Essex	472	295		187	440	371	266	153
Other Small Breeds						410	370	
Grades or Crosses	589	464	334		620	414	346	

ROLL OF HONOR.

The following table gives the ages and weights of steers exhibited at the four Fat Stock Shows (nearest the ages named) that have made the largest average gain per day since birth.

The representative animals named in the list are justly entitled to retain their places of honor until at some future shows they are excelled in the matter of early maturity.

Of the 33 animals included in the table, the four Fat Stock Shows are represented as follows: 1878, 3 steers, 1879, 9 steers, 1880, 11 steers; 1881, 10 steers.

The number of the various breeds and crosses in the table are as follows 6 Shorthorns, 23 Grade Shorthorns, 4 Grade Hereford.

It will be seen that each succeeding show, excepting the last, has an increased number of animals represented on this list, which is evidence that a better class of cattle is shown each year, so far as relates to early maturity.

Roll of Honor.

Month, 30 days.	No. days	Age of steer in days, nearest to time named.	Breed.	Weight.	Average gain per day in pounds.	Exhibited.		Name of Animal.
						Year.	By.	
			Steers 1 and under 2 years.					
12	360							
13	390							
14	420	422	Grade Shorthorn	1,104	2.61	1880	John D. Gillett	Robinson Crusoe
15	450	453	Grade Shorthorn	1,220	2.69	1880	John D. Gillett	Change
16	480	480	Grade Hereford	1,152	2.40	1879	T. L. Miller	Putnam
17	510	513	Grade Shorthorn	1,373	2.67	1879	John D. Gillett	Jim Smith
18	540	544	Grade Shorthorn	1,401	2.57	1879	John D. Gillett	Albert Pell
19	570	564	Grade Shorthorn	1,286	2.46	1879	Amos F. Moore	Hawks
20	600	585	Grade Shorthorn	1,450	2.47	1880	Cobb & Phillips	Sibley
21	630	648	Grade Shorthorn	1,420	2.19	1880	Amos F. Moore	Fred
22	660	650	Shorthorn	1,480	2.28	1878	J. N. Brown's Sons	Duke Sangamon
23	690	688	Grade Shorthorn	1,880	2.73	1880	John D. Gillett	Porter
			Steers 2 and under 3 years.					
24	720	719	Grade Shorthorn	1,565	2.17	1881	J. H Potts & Son	Major
25	750							
26	780	783	Shorthorn	1,635	2.09	1881	J. D. Gillett	Chance
27	810	811	Grade Shorthorn	1,605	1.97	1881	J. D. Gillett	Chub
28	840	832	Grade Hereford	1,845	2.21	1880	T. L. Miller	Conqueror
29	870	872	Grade Shorthorn	1,935	2.21	1881	J. D. Gillett	Wild Bill
30	900	908	Shorthorn	1,825	2.01	1880	John B. Sherman	Belmont
31	930	940	Grade Shorthorn	1,975	2.10	1880	J. D. Gillett	Blood
32	960	964	Grade Shorthorn	1,940	2.01	1881	J. D. Gillett	Cherry
33	990	977	Grade Shorthorn	2,081	2.12	1879	J. D. Gillett	Barney
34	1,020	1,005	Shorthorn	1,925	1.91	1880	Wm Sandusky	Abe Renic
35	1,050	1,054	Grade Hereford	1,925	1.82	1881	T. L. Miller	Kansas
			Steers 3 and under 4 years.					
36	1,080	1,084	Shorthorn	1,950	1.79	1878	Van Meter & Hamilton	Young Mary Steer 8th
37	1,110	1,105	Grade Shorthorn	1,855	1.67	1881	Morrow & Muir	Frosty
38	1,140	1,132	Grade Shorthorn	2,024	1.76	1879	J. D. Gillett	Cap. Nels. Morris
39	1,170	1,176	Grade Shorthorn	2,130	1.81	1881	J. D. Gillett	Phil Sheridan
40	1,200	1,190	Grade Hereford	2,145	1.80	1881	T. L. Miller	Conqueror
41	1,230	1,237	Grade Shorthorn	2,095	1.69	1881	J. D. Gillett	McMullen

Roll of Honor—Continued.

Month 30 days	No days	Age of steer in days nearest to time named	Breed	Weight	Average gain per day in pounds	Exhibited		Name of Animal
						Year	By	
42	1 260	1 269	Grade Shorthorn	2 307	1 81	1879	J D Gillett	Downhorn
43	1 290	1 298	Grade Shorthorn	2 305	1 70	1878	Van Meter & Hamilton	Brand Steer
44	1 320	1 304	Grade Shorthorn	2 308	1 75	1879	J D Gillett	Barney McCue
45	1 350	1 335	Grade Shorthorn	2 060	1 54	1879	J H Graves	Nichols
46	1 380	1 367	Shorthorn	2 350	1 71	1880	Wm Sandusky	Vermilion
47	1 410	1 411	Grade Shorthorn	2 030	1 44	1880	J H Graves	Morrow

CLASS A—CATTLE.

Table giving number of entries of Cattle of the several ages and breeds including grades and crosses exhibited at the 1878 1879 1880 and 1881 Fat Stock Shows

Cattle	Shorthorn	Hereford	Devons	Other pure breeds	Grades or Crosses	Sweepstakes	Grand Sweepstakes	Car loads	Dressed Bullocks	Heaviest Fat Steer	Early maturity	Total
Steer 4 years or over												
1878	2	1	2		12	14						31
1879	5	4	1		13	19						51
1880												
1881												
Steer 3 and under 4 years—												
1878	2	3	2		10	8		2				27
1879	2	2	1		29	20		3				57
1880	4	1	2		18	18		2	3		10	58
1881	3	2	2		34	25		4	3		10	83
Steer 2 and under 3 years—												
1878	5	1			12	13		2				33
1879	4	1			31	21		3				60
1880	5	3	1		20	22		1	2		10	64
1881	7		3		33	27		2	2		10	84
Steer 1 and under 2 years—												
1878	3				2	5						10
1879	6	3	1		14	14		1				39
1880	1	1			22	1		1	1		10	1
1881					5	6			1		8	20
Cow 3 years or over—												
1878	6	3	1			6						16
1879	8	2	2	1	1	10						24
1880	3	1			1	5			1			11
1881	4	3	3		2	8						20
All ages—												
1878							21					21
1879							63					63
1880							58			13		71
1881							30			10		40
Total—												
1878	18	8	5		36	46	21	4				138
1879	25	12	5	1	88	84	63	9		7		303
1880	13	6	3		61	60	58	4	7	13	30	255
1881	11	5	8		74	66	30	6	6	10	28	247

CLASS C—SHEEP.

Table giving number of entries of Sheep of the several ages and breeds, including grades and crosses, exhibited at the 1878, 1879, 1880 and 1881 Fat Stock Shows·

Breed.	Cotswold	Other long wools	Southdown	Other mid'le wools.	American Merino	Other fine wools	Grades or Crosses	Sweepstakes	Gr'nd sweepstakes	Car loads	Dressed carcass	Heaviest fat sheep.	Total
Wether 2 years old or over—													
1878.													
1879.	5	2	10	4			18	21					60
1880.	5	1	9		1		7	14		2	3		42
1881.	5		5	2			2	10		2			26
Wether 1 and under 2 years—													
1878.	1							2					3
1879.	5		8				12	12					37
1880.	2		5	2	2		4	11			3		26
1881.	3		5	2			4	9					23
Wether under 1 year—													
1878	2												2
1879.	1		2				4	6					13
1880.	1		1		1		3	4					10
1881.			2				3	5					10
Ewe 2 years or over—													
1878	3							4					7
1879.	16		8	2			10	22					58
1880.	1		2		2		1	4					10
1881.	1		1				1	3					6
Ewe 1 and under 2 years—													
1878								1					1
1879.	13		2	1			4	16					36
1880.			2	1	2		1	4					10
1881.	7						4	6					17
Ewe under 1 year—													
1878.								2					2
1879.	4	1	1				2	5					13
1880.		1	2	1			3	4					11
1881.	5						6	8					19
All ages—													
1878.									9				9
1879.									49				49
1880.									19			7	26
1881.									14			6	20
Total entries—													
1878.	6							9	9				24
1879	44	3	31	7			50	82	49	2			284
1880.	9	2	21	4	8		19	41	19	2	3	7	138
1881.	21		13	4			20	41	14	2		6	121

CLASS D—SWINE.

Table giving number of entries of Swine of the several ages and breeds including grades and crosses exhibited at the 1878 1879 1880 and 1881 Fat Stock Shows

Breed	Berkshire	Poland China	Chester White	Other large breeds	Essex	Other small breeds	Grades or Crosses	Sweepstakes	Grand Sweepstakes	Car loads	Heaviest fat hog	Total
Barrow 2 years old or over—												
1878		2	1					4				7
1879		2			2			3				7
1880												
1881												
Barrow 1 year old and under 2 years—												
1878		2					1	7				10
1879	5	6			2		2	15				30
1880		8					3					11
1881	1	3	1				1	7				13
Barrow 6 months old and under 1 year												
1878		3					2	5				10
1879		4					2	7				13
1880		2	2				2	3				9
1881					3		2	5				10
Barrow under 6 months old –												
1878		1						3				4
1879	5	2			1			7				15
1880												
1881												
Sow 2 years old or over—												
1878		1										1
1879	1	3			3		3	8				18
1880												
1881												
Sow 1 and under 2 years—												
1878	2	1			1							4
1879	1	3			2		2	3				11
1880	1	1	1				2	3				8
1881	1	1	1		2		2	7				15
Sow 6 months old and under 1 year—												
1878												
1879	3	3				4	1	8				19
1880		3	2				2	5				12
1881		2	2		3		4	7				18
Sow under 6 months old—												
1878		1										1
1879	3	1			2			6				12
1880												
1881												
Total—												
1878	2	11	1		1		3	19	13			50
1879	18	24			12	4	10	57	16	1		142
1880	1	9	5				9	16	14		2	56
1881	3	6	4		8		9	26	16		10	82

DISTRIBUTION OF ENTRIES AND PREMIUMS.

The following table gives the number of entries of stock from the several States, and the amount of premiums paid thereon at the Fat Stock Show during the last four years.

The leading meat-producing States have been well represented, and have received premiums in proportion to the number of entries and quality of the stock exhibited.

As the exhibition and the good results become better known to the stockmen throughout the West, it is believed that the number of exhibiters will be largely increased, and the quality of stock improved.

The rivalry between exhibiters residing in the different States is such as to ensure, at future Fat Stock Shows, the exhibition of the best specimens of stock to be found in the country.

1878.

State	CATTLE		SHEEP		HOGS	
	No. entries	Amount premiums paid	No. entries	Amount premiums paid	No. entries	Amount premiums paid
Illinois	8	$1 320	6	$100	36	$340
Kentucky	26	115				
Missouri	13					
Indiana	9	6			9	50
Iowa	6	25				
Wisconsin	1					
Michigan				40	3	20
Ohio					3	20
Canada			13	150		
Total	138	$1 5	24	$290	51	$430

1879

State	CATTLE		SHEEP		HOGS	
	No. entries	Amount premiums paid	No. entries	Amount premiums paid	No. entries	Amount premiums paid
Illinois	260	$1 970	199	$505	112	$305
Kentucky	16	200				
Missouri	4	15				
Indiana	8	50			11	45
Iowa	3	75				
Wisconsin	6		11			
Michigan			16	70	19	105
Ohio	6					
Canada			58	225		
Total	303	$ 310	284	$800	142	$455

1880.

State	CATTLE		SHEEP		HOGS	
	No. entries	Amount premiums paid	No. entries	Amount premiums paid	No. entries	Amount premiums paid
Illinois	229	$1 305	110	$345	42	$215
Iowa	13	125				
Kentucky	6	125				
Ohio	5	15				
Indiana	2				14	150
Michigan			2	25		
Canada			26	170		
Total	255	$1 570	138	$540	56	$365

1881.

State	Cattle		Sheep		Hogs	
	No entries	Amount premiums paid	No entries	Amount premiums paid	No entries	Amount premiums paid
Illinois	204	$1 580	68	$339	49	$313
Wisconsin	14	170				
Kentucky	24	125	7	60		
Iowa	10	85				
Canada	3	80	35	190		
Michigan			11	54	12	79
Indiana					23	80
Total	255	$2 040	121	$643	84	$472

Total number of entries of Cattle, Sheep and Hogs from the several States, at the Fat Stock Shows of 1878, 1879, 1880 and 1881, as well as the total premiums paid thereon for the years named

Illinois	776	$6 175	383	$1 289	239	$1 173
Kentucky	72	595	7	60		
Missouri	17	15				
Indiana	19	115			57	325
Iowa	32	310				
Wisconsin	21	170	11			
Michigan			34	189	34	204
Ohio	11	15			3	20
Canada	3	80	132	735		
Total	951	$7 475	567	$2 273	333	$1 722

GOOD PRICES.

Not the least of the important results growing out of Fat Stock Shows is the attraction to the exhibition and the Union Stock Yards at Chicago, of the leading butchers from Eastern and Western cities for the purchase of Christmas meat.

The competition among butchers for the possession of the stock exhibited at the shows enabled the owners to sell to the best advantage, as will be seen by the following figures.

Butchers, appreciating the advantage of the shows in bringing together annually a large number of the best meat animals to be found in the West, have attended the exhibition from year to year in increased numbers.

The prices obtained for cattle at the last show, so far as reported, are as follows.

The average price obtained on each breed and their grades is given for 1880 and 1881.

SALES.

Seller.	Breed.	Name of Animal.	Age at show, days.	Average gain per day since birth	Weight at show, lbs.	Price received per 100 lbs. gross	Average increase in value per day since birth	*Price obtained over market rates at stock yds, 100 gross	Amount rec'vd over market value
John Sherring, Florid	Shorthorn	Florid Duke	1,544	1 53	2 370	$7 25	$0 11	$0 75	$17 77
Nelson Jones, Towanda	‘‘	Molly Bates	2,157	0 82	1,785	6 00	05	......	....
Illinois Industrial University, Champaign	‘‘	Ezra	1,004	1 29	1,305	6 00	08	......	....
Average, 1881	....	....	......	......	......	$6 42	......	......	....
‘‘ 1880	....	....	......	......	......	6 81	......	......	....
David Grant, Petersburg	Grade Shorthorn	John Bull	1,052	1 80	1,900	7 00	12	50	9 50
David Grant, Petersburg	‘‘ ‘‘	Echerd	880	1.70	1,500	9 00	15	2 50	37 50
D. W Smith, Bates	‘‘ ‘‘	White Lady	917	1 61	1,485	6 50	10	......	....
D. W Smith, Bates	‘‘ ‘‘	Col. Mills	947	1 80	1,710	6 50	12	......	....
T. W. Hunt, Ashton	‘‘ ‘‘	Sam Noe	1,287	1 50	1,940	8 00	12	1 50	29 10
T W. Hunt, Ashton	‘‘ ‘‘	Red Chub	1,290	1 58	2,050	8 00	13	1 50	30 75
T. W. Hunt, Ashton	‘‘ ‘‘	Pickrell	1,362	1 39	1,895	8 00	11	1 50	27 42
T. W. Hunt, Ashton	‘‘ ‘‘	Increase	1,217	1.65	2,015	8 00	13	1 50	30 22
T W. Hunt, Ashton	‘‘ ‘‘	Royal Charmer	1,066	1.64	1,755	8 00	13	1 50	26 32
T. W. Hunt, Ashton	‘‘ ‘‘	Red Lord	1,045	1.68	1,765	8 00	13	1 50	26 47
T. W. Hunt, Ashton	‘‘ ‘‘	Thad Stevens	920	1 91	1,760	8 50	16	2 00	35 20
T. W. Hunt, Ashton	‘‘ ‘‘	Sensation	1,028	1.80	1,855	8 00	14	1 50	27 82
T. W. Hunt, Ashton	‘‘ ‘‘	Baron	872	1.72	1,505	8 00	14	1 50	22 57
T. W. Hunt, Ashton	‘‘ ‘‘	Washington	620	2.01	1 250	8 00	16	1 50	18 75
H. C. Nelson, Canton	‘‘ ‘‘	Quid Si Nam	1,237	1.51	1,880	7 00	10	50	9 40
H. C. Nelson, Canton	‘‘ ‘‘	Quid Nam	1,032	1.50	1,550	7 00	10	50	7 75
H. C. Nelson, Canton	‘‘ ‘‘	Slow Go	900	1.56	1,405	7 00	11	50	7 02
H. C. Nelson, Canton	‘‘ ‘‘	Si Nam	893	1.61	1,440	7 00	11	50	7 20
H. C. Nelson, Canton	‘‘ ‘‘	Short Sir	1,156	1.40	1,625	7 00	10	50	8 12
H. C. Nelson, Canton	‘‘ ‘‘	Quid	1,234	1.43	1,775	7 00	10	50	8 87
H. C. Nelson, Canton	‘‘ ‘‘	Airdrienne 4	1,981	0.75	1,500	6 50	05	......	....
H. C. Nelson, Canton	‘‘ ‘‘	Nam Si	899	1.52	1,375	7 00	11	50	6 87
H. C. Nelson, Canton	‘‘ ‘‘	Quid Esset	862	1.68	1,450	7 00	12	50	7 25
H. C. Nelson, Canton	‘‘ ‘‘	Quid Sit	964	1.65	1,600	7 00	11	50	8 00
H. C. Nelson, Canton	‘‘ ‘‘	Belton	907	1.68	1,525	7 00	12	50	7 62
H. C. Nelson, Canton	‘‘ ‘‘	Quid Nunc	954	1.53	1,460	7 00	11	50	7 30
H. C. Nelson, Canton	‘‘ ‘‘	Si Quid	890	1.59	1,420	7 00	11	50	7 10
H. C. Nelson, Canton	‘‘ ‘‘	Quid Nam	1,044	1.46	1,525	7 00	10	50	7 62

J. D. Gillett, Elkhart	Grade Shorthorn	Snow	1,268	1.48	1,885	8 00	12	1 50	28 27
J. D. Gillett, Elkhart	" "	Milk	1,329	1.45	1,930	8 00	12	1 50	28 95
J. D. Gillett, Elkhart	" "	White Lad	1,329	1 58	2,105	8 00	13	1 50	31 57
J. D. Gillett, Elkhart	" "	Norway	1,329	1.53	2,045	8 00	12	1 50	30 67
J. D. Gillett, Elkhart	" "	White Feather	1,268	1 61	2,050	8 00	13	1 50	30 75
J. D. Gillett, Elkhart	" "	Arctic	1,268	1.37	1,740	8 00	11	1 50	26 10
J. D. Gillett, Elkhart	" "	White Cream	1,237	1.67	2,075	8 00	13	1 50	31 12
J. D. Gillett, Elkhart	" "	Downy	1,237	1.48	1,825	8 00	12	1 50	27 37
Illinois Industrial University, Champaign	" "	Oscar	978	1.46	1,430	6 00	08		
Average, 1881						$7 48			
" 1880						6 05			
T. L. Miller Co., Beecher	Hereford	Will	1,224	1 60	1,965	12 00	19	5 50	108 07
T. L. Miller Co., Beecher	"	Washington	1,242	1.55	1,930	12 00	19	5 50	106 15
T. E. Miller, Beecher	"	Maid of the Mist	2,243	0.69	1,560	7 00	05	50	7 80
T E Miller, Beecher	"	Lady Eliott	1,326	1.00	1,335	7 00	07	50	6 67
Thos. Clark, Beecher	"	May Queen	1,777	0 79	1,410	7 00	05	50	7 05
Average, 1881						$9 00			
" 1880						12 50			
T. L. Miller Co., Beecher	Grade Hereford	Conqueror	1,190	1.80	2,145	12 00	22	5 50	117 97
T. L Miller Co., Beecher	" "	Bachelor	1,190	1 71	2,035	12 00	20	5 50	111 92
T. L. Miller Co., Beecher	" "	Kansas	1,054	1 82	1,925	12 00	22	5 50	105 87
T L. Miller Co., Beecher	" "	Tom Brown	1,145	1 48	1,700	12 00	18	5 50	93 50
T. L. Miller Co., Beecher	" "	Oxford	1,135	1.36	1,550	12 00	16	5 50	85 25
C M. Culbertson, Chicago	" "	Left	1,056	1 58	1,675	9 00	14	2 50	41 87
C M. Culbertson, Chicago	" "	Right	1,056	1 62	1,715	9 00	14	2 50	42 87
C M Culbertson, Chicago	" "	Broad Horns	1,291	1 42	1,835	7 00	10	50	
C M. Culbertson, Chicago	" "	Beefy Back	2,059	0 93	1,925	6 50	06		
Illinois Industrial University, Champaign	" "	Burnham	1,129	1 47	1,670	6 00	09		
Illinois Industrial University, Champaign	" "	Junior	806	1.65	1,335	6 00	10		
Average, 1881						$9 41			
" 1880						12 50			
L Rawson, Oak Creek, Wis	Devon	Buck	1,328	0.92	1,230	6 50	06		
L Rawson, Oak Creek, Wis	"	Broad	1,268	0 84	1,075	6 50	05		
L. Rawson, Oak Creek Wis	"	John	928	0 99	925	6 50	06		
L Rawson, Oak Creek, Wis	"	Jerry	969	1.00	975	6 50	06		
L Rawson, Oak Creek, Wis	"	Jim	614	1 36	835	6 50	09		
Average, 1881						$6 50			
" 1880						6 50			

Sales—Continued

Seller	Breed	Name of Animal	Age at show days	Average gain per day since birth	Weight at Show lbs	Price received per 100 lbs gross	Average increase in value per day since birth	*Price obtained over market rates at stock yds 100 gross	Amount rec vd over market value
Illinois Industrial University Champaign	Grade Devon	Thomas	978	1 33	1 300	$6 00	$0 08		
Illinois Industrial University Champaign		May Duke	917	1 32	1 215	6 00	08		
Average 1881						$6 00			
1880									
Illinois Industrial University Champaign	Ayrshire	Jack	1 004	1 29	1 305	6 00			

Amount received over prices paid for export cattle $1 500 30

* The price for choice export cattle for the week of the Show did not average over $6 50 per 100 pounds gross

COMPARISON OF SALES.

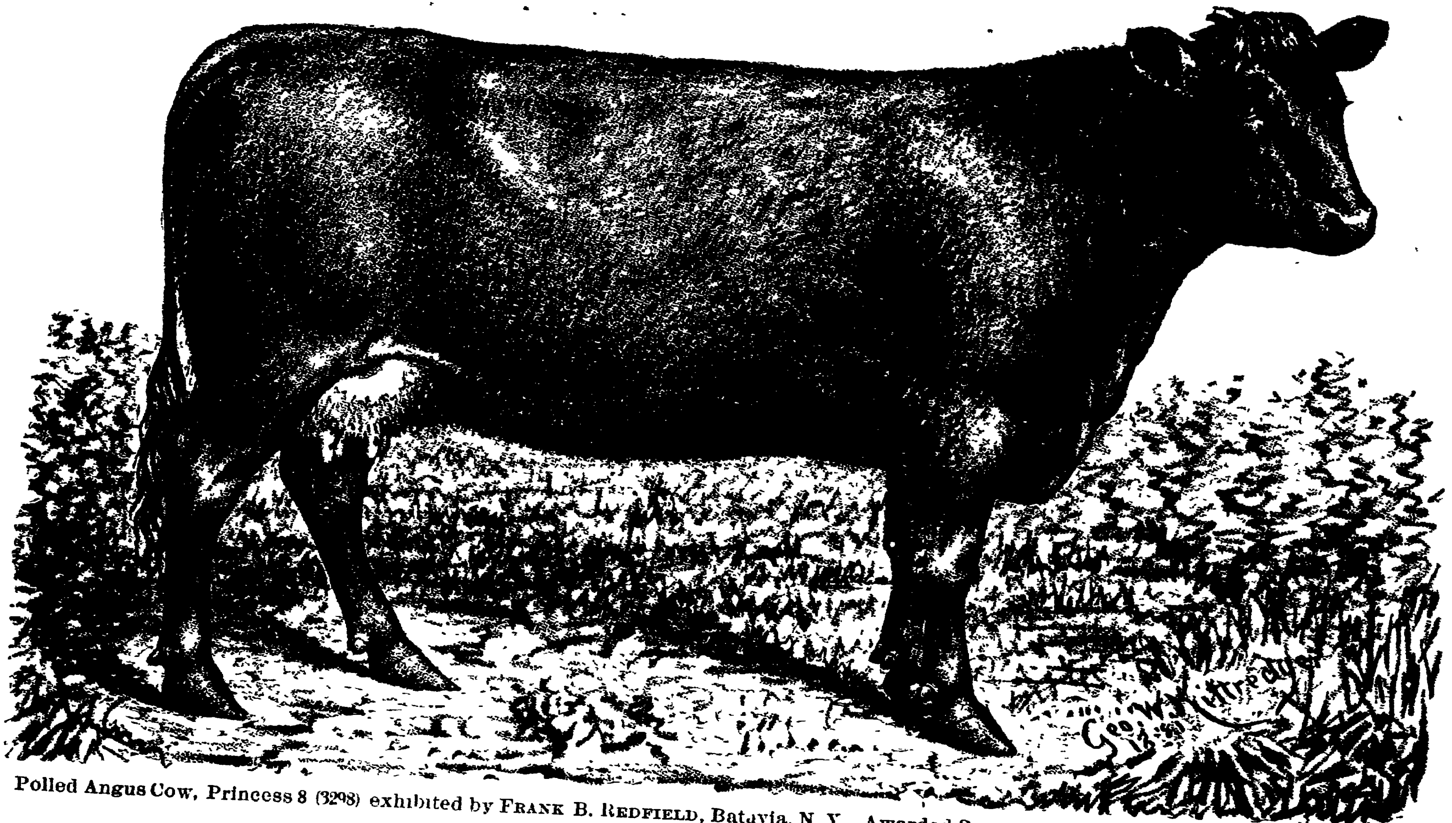
The following table is given in order that a comparison may be made, so far as reported, of the prices obtained for fat cattle of the several breeds and grades exhibited and sold at the last two Fat Stock Shows:

Breed	Year	No head	Price per 100 lbs gross
Shorthorn	1880	6	$6 81
Shorthorn	1881	3	6 42
Average		4	$6 62
Grade Shorthorn	1880	2	6 05
Grade Shorthorn	1881	37	7 48
Average		19	$6 76
Hereford	1880	1	12 50
Hereford	1881	5	9 00
Average		3	$10 75
Grade Hereford	1880	2	12 50
Grade Hereford	1881	11	9 41
Average		6½	$10 95
Devon	1880	2	$6 50
Devon	1881	6	6 70
Average .		4	$6 60
Grade Devon	1880		
Grade Devon	1881	2	6 00
Average		2	$6 00
Ayrshire	1880		
Ayrshire	1881	1	6 00
Average		1	$6 00

CLASS E—FAT POULTRY.

Table giving number of entries of Fat Poultry exhibited at the 1878, 1879, 1880 and 1881 Fat Stock Shows·

Poultry.	1878	1879	1880	1881
TURKEYS.				
Turkey Cock, fowl	......	1	4	2
Turkey Cock, chick	......			2
Turkev Hen, fowl	......	1	3	1
Turkey Hen, chick	......			1
Heaviest Fat Turkey	......	......	......	1
GEESE.				
Gander, fowl	......	1	3	3
Gander, chick	......			2
Goose, fowl	......	1	2	4
Goose, chick	......			1
Heaviest Fat Gander	......	......	......	3
DUCKS.				
Drake, fowl	1	2	2	3
Drake, chick				5
Duck, fowl	1	2	2	3
Duck, chick				3
Heaviest Fat Drake	......	......	......	3
ASIATIC FOWLS.				
Cock, fowl	......	......	......	2
Cock, chick	......	......	......	4
Hen, fowl	......	......	......	2
Hen, chick	......	......	......	3
Heaviest Fat Fowl	......	......	......	2
OTHER THAN ASIATICS.				
Cock, fowl	......	......	......	1
Cock, chick	......	......	......	1
Hen, fowl	......	......	......	1
Hen, chick	......	......	......	1
Heaviest Fat Fowl	......	......	......	1
DRESSED POULTRY.				
Dressed Cock, fowl	1	2	8	4
Dressed Cock, chick				2
Dressed Hen, fowl	......	2	11	2
Dressed Hen, chick	......			2
Heaviest Fat Fowl	......	......	......	1
DISPLAYS, ETC.				
Capon	1	......	......	......
Display Live Fat Poultry	......	2	4	2
Display Dressed Poultry	......	......	......	1
Total	4	14	39	67



Polled Angus Cow, Princess 8 (3298) exhibited by FRANK B. REDFIELD, Batavia, N. Y. Awarded Sweepstakes Premium, State Fair, 1881.—p 221.

Winter Meeting of the Board, 1882.

DEPARTMENT OF AGRICULTURE,
SPRINGFIELD, Tuesday, Jan. 3, 1882,
10 O'clock A. M.

The State Board of Agriculture met in regular annual session.

President Scott in the chair.

Present—President Scott, Ex-President Gillham, Vice-Presidents Haskell, Moore, Dysart, Snoad, Vittum, David, Beaty, Judy, Smith, Pullen, Gore, and Landrigan.

Absent—Vice-Presidents Ellsworth, Emery, Reynolds, Cobb, Voorhies, Bishop, and Washburn.

President Scott addressed the Board as follows:

PRESIDENT SCOTT'S ADDRESS.

The past year is an exception to the many preceding seasons of agricultural prosperity enjoyed by the farmers of this State, yet, notwithstanding the unprecedented drouth during the growing season and the drainage sustained in some portions of the State by excessive rains during the fall and early winter months, there has been a large surplus of grain and meat produced for export.

The rapid development of the agricultural resources of the State and the growing of a greater diversity of crops makes less prominent some of the staple crops that previously were more exclusively grown under the less profitable system of farming so common to the early settlement of the State.

Nearly three-fourths of the three million people residing in this State are directly engaged in agricultural pursuits, and all are dependent upon the productions of the soil and mine for the raw material with which to supply the factories, forges, mills and to make necessary the vast transportation facilities employed to carry to the markets of the world the results of the industry and frugality of the tillers of the soil and the skill of our artisans.

The mutual dependence of the farmer, merchants, manufacturer and carrier upon the results of the harvest should unite all classes in the work of developing a better and more profitable system of agriculture, that will without impoverishing the natural fertility of the soil enable the farmers of the State to increase the wealth of all classes by adding each year to the vast surplus of grain and meat that Illinois exports to the markets of the

WORK OF THE BOARD.

The Illinois State Board of Agriculture has for over a quarter of a century been recognized as a progressive organization, anticipating the wants of the most enterprising and successful agriculturists and advancing into new fields of labor as rapidly as their means and public sentiment would warrant.

The General Assembly and citizens, interested in the development of the agricultural resources of this State have generously responded to every call of this Board with needed appropriations and service to accomplish the work authorized by the Board.

There is not a member of the Board that entertains the thought that there is no new or important work that should receive early attention or that it is not possible to improve upon the methods adopted for conducting the State Fair, the Fat Stock Show, the collection and publication of crop and stock statistics, the department work or the advancement of other interests having important bearings on the happiness and prosperity of the agricultural and industrial classes of the State.

The tested and approved methods may be considered with the light of another year's experience after the discussion of various new matters suggested in the reports of Superintendents of departments and Committees have received proper attention.

NEW WORK.

The promotion of agriculture, horticulture manufactures and domestic arts' has been prescribed by law as the work of the Illinois Department of Agriculture

The people of the State expect that this Board will make proper effort to make a profitable local market by attracting foreign capital and emigration—calling attention to the cheap fuel supplies transportation facilities and other advantages for manufacturing—as well as to increase production by creating an emulation among farmers that will insure thorough drainage improvement in the fertility of the soil, the better cultivation of a greater variety of crops and the breeding and feeding of stock noted for early maturity and superior quality of flesh

The Board has entrusted to its care the most important interest in the State which in value exceeds the gross earnings of the railroads the annual value of the manufactured articles of the State and the annual production of the mines of the State

According to the late census returns in amount of field crops produced this State leads all other States in corn wheat, rye and oats, and stands fourth in hay and potatoes

In farm animals this State exceeds all others in number of horses and hogs

In meat-packing lumber traffic malt and distilled liquors manufacture of agricultural implements and number of miles of railroads, Illinois is not approached by any other State and in extent of coal mined is exceeded by two States and in iron and steel but by three States

EVIDENCES OF IMPROVEMENT

Each succeeding year the ranks of the producers are strengthened by a more intelligent and wealthy class of farmers business and professional men who prefer this calling because it insures the most certain and satisfactory investment of time and money as well as the opportunity to enjoy the independent, healthful quiet and pleasant life in the country.

The attractive and commodious farm buildings and improvements, the fine herds and flocks to be found in almost every township in the State are some of the unmistakable evidences of the expenditure of more brains and energy than heretofore by the farmers of Illinois

The application, intelligence and means necessary to conduct commercial enterprises, when applied to agriculture rarely results in failure and many of the leading and most successful stock breeders and farmers of the State are men who have on account of ill-health resulting from overwork or other causes been induced to leave the office, counting room and factory and engage in rural pursuits

No better evidence of the solidity and certainty attending the results of the farm is needed than the fact that capitalists much prefer to loan money to farmers than any other class of business men

THE PRESS

Among the most influential agencies for improving the minds and farms of the producers of this State none are entitled to more credit than the press

The agricultural press which until late years had exclusively occupied this field, has recently been powerfully aided in promoting this industry by the metropolitan and country press

The leading newspapers of the country, with few exceptions, have ably conducted agricultural departments under the management of practical and progressive agriculturists—men who are thoroughly alive to the wants of the farmer and the necessity of adopting the more profitable methods requiring through drainage—more thorough cultivation of the best varieties of cereals and vegetables—the breeding and feeding of improved stock, as well as the use of labor-saving machinery

The weekly issues of some papers adapted to the wants of the farmers exceed one hundred thousand copies, and this powerful influence has largely increased the number of reading farmers and in no small degree conduced to the intelligence and prosperity of all engaged in rural pursuits

The farmers of this State should not only subscribe and urge their neighbors to subscribe for this class of papers but send for publication the results of successful experiments, inquiries, suggestions, and the causes for failure in growing crops

There should be half a million copies of papers of this class distributed among the farmers of Illinois each week, and if proper efforts are made by the managers to publish such matter as will commend itself to farmers (who as a class have time for study and reflection and are eminently practical,) the result will not only largely increase the revenues of the newspapers but materially aid in more rapidly developing the most fertile and desirable sections of this country

The day has passed when farmers are content with or will support other publications Every weekly paper published in the State should have an agricultural department and the farmers should write for and make the department of special interest to all concerned.

CAPACITY OF FARMERS.

There can be no better training for a business man than the discipline and thorough performance of the duties incident to the life of a boy, raised on a well conducted farm, where the family is more or less dependent upon the proceeds of individual labor and all are required to carefully and promptly discharge their daily duties as well as to husband their available resources.

The leading spirits in all the departments of life with few exceptions received their early training on the farm, and were it not for the fresh infusion of young men of vigor, good habits, well balanced heads, with strength of character, from the country to continually fill the decimated ranks of the professional and business men, mechanics and other occupations, there would be less progress made in all the departments of life.

The proportion of failures among farmers is much less than with the same number of men engaged in other kinds of business, and each succeeding year there is less discontent among intelligent well-informed agriculturists.

It is rarely that a better permanent investment can be found than a well improved Illinois farm, and no State can offer more advantages to her citizens in the way of protection to life and property, social and educational privileges, transportation facilities, easily cultivated and fertile soil and good markets.

FARMERS' INSTITUTES.

Among the agencies that might be used by this Board in educating and improving the condition of the farmers of the State are Farmers' Institute meetings, which will, it is believed, return a large investment for the limited expenses incurred.

Any effort this Board may put forth that is calculated to stimulate investigation, educate, promote the prosperity of and thereby add to the happiness of the agriculturists of this State, will meet with general approval

This desirable object can be largely accomplished by the holding of institute meetings of the character proposed at accessible points in various parts of the State.

The State Board of Agriculture has important auxiliary forces in the efficient working agricultural organizations of the State, which if united in a work of this character would accomplish great good.

I doubt not that the Illinois Dairymen's Association, the State Horticultural Society, the Wool Growers' Association, the Swine Breeders' Association the Tilemakers' Association, Cane Growers' and Sugar Makers' Convention, as well as the Illinois Industrial University, would be glad to send creditable speakers to such institute meetings as the Board might decide upon

The papers read and the discussions following would call attention to the necessity of more thorough and practical education of farmers—the more profitable methods of cultivating crops, the advantages of breeding and feeding improved stock, the good results attending drainage, the better management of county fairs, and other subjects of interest.

The Board can well afford to pay the traveling expenses to those institute meetings of suitable persons representing the various specialties named, and there is but little doubt but that the gentlemen selected would cheerfully contribute their time to promote the objects of meetings of this character at least until the advantages and benefits resulting therefrom had demonstrated the practicability of such meetings to the General Assembly.

It is recommended that the Board provide for the holding during the present year at least one institute meeting in each Congressional district of the State The time, place and other arrangements for the institute meeting might be left with the Vice-President of the several districts, the Secretary of this Board and the officers of the county fairs in the several Congressional districts

It is further recommended that a reasonable appropriation be made by the Board for the holding of institute meetings during the present year.

THE INDUSTRIAL UNIVERSITY.

This institution is liberally supported by the State and provided with a large and competent corps of instructors, and has all the modern appliances necessary to give the youth of the State educational advantages equal to any institution in the country.

The Agricultural College, in connection with the University, is deserving of the hearty support and generous patronage of the farmers of Illinois, who only need to examine into the practical and approved methods employed in teaching to become earnest supporters of this admirably conducted institution, that has for years been recognized by competent authorities as deserving the confidence and patronage of the citizens of Illinois.

Farmers who desire to fit their sons for professional business or rural pursuits can not do better than to patronize the State University, where the pupils may have the benefit of well qualified instructors and the advantage of association with an abundance of the active, resistless, progressive spirit characteristic of western men and institutions.

The acquaintance of the students that will soon take a prominent part in the politics and business enterprises of the leading agricultural State, is a matter worthy of consideration in selecting an institution of learning.

AGRICULTURAL TEXT BOOK

Your attention is again called to the importance of having an agricultural text book prepared for use in the country schools of the State and I again renew my recommendation that this Board, by resolution requests the Regent and Professor of Agriculture of the Illinois Industrial University to prepare a suitable text book of this character

EXPERIMENTAL FARM

The importance of establishing an experimental farm in this State, to be managed by the State Board of Agriculture, is frequently mentioned by the press and farmers interested in advanced agriculture

The statutes provide that the President of the State Board of Agriculture shall be ex-officio a member of the Board of Trustees of the Illinois Industrial University

The University Board has appointed the President of this Board Chairman of the Farm Committee which has charge of the well-arranged farm in connection with the University The farm is admirably adapted for the purpose of conducting experiments

The committee have arranged for and have been conducting a large number of important experiments in feeding and breeding farm animals the growing of crops, the use of fertilizers, and other matters of special interest to the farmers of this State

The personal supervision given these experiments by the Dean of the Agricultural College insures accurate reports and results that will go far to determine many disputed questions

The relations existing between the Illinois Industrial University and this Board are such that I do not hesitate to assure the Board that any further experimental work not now receiving attention, that the Board desire to have conducted, will be carried out in the most thorough careful and intelligent manner

The University experimental farm will enable the Illinois State Board of Agriculture to indirectly conduct any experiments likely to advance the general interest of the farmers of this State

It is recommended that a standing committee of this Board be appointed to advise with and cooperate with the Farm Committee of the University in arranging for a series of experiments to be conducted at the University Farm and by such parties in various parts of the State as can be interested in this direction

STATE FAIR

The Annual Fairs of the Board in the extent and variety of animals and articles exhibited are keeping pace with the rapid development of agriculture in the State

The exhibition in the several departments at the State Fair was large and most credible to all concerned and as an educator to the industrial classes could hardly be improved

The incompleteness of the exhibition in the Halls on Monday of the Fair is a matter worthy of consideration and it is suggested that the Superintendents be on the grounds to receive articles for exhibition on Thursday before the Fair to the end that all the departments may be in presentable condition on the opening day

The large amount required for premiums and expenses demands that much consideration be given to the matter of increasing the receipts of the State Fair

The attractions each year are sufficient to secure the attendance of all the interested stock-men and farmers residing within convenient distance of the place of holding the Fairs but as this class is but a portion of the attendance it is important to prepare and advertise suitable attractions in addition to the regular display, to insure a large attendance of people who attend Fairs as a place of amusement rather than for instruction

The value of the exhibition to all interested in the breeding of improved stock or advanced agriculture as illustrated by the exhibits in the several departments is not lessened by additional and suitable attractions likely to secure the attendance of residents of cities and the young people of neighboring towns that are prompted to patronize the Fair by the excursion rates and advertised novelties

The enlargement of the premiums, and the extension of other work of the Board dependent upon the receipts of the Fair, are desirable as soon as the necessary funds can be obtained for this purpose

FAT STOCK SHOW

The results of the Fourth Annual Fat Stock Show are highly satisfactory, both as to the interest and quality of the exhibition as well as to [illegible] manifested by stock-men, dealers and consumers

The total receipts of the four shows held are as follows Gate and entrance fees, $13,114 38, donations, $11 771 00, total $24,885 38

The disbursements are as follows Premiums, $12,378 49, expenses, $15,549 32, showing a deficit of $3,007 43

The receipts not including donations are $14 813 43 less than the outlay for premiums and expenses during the past four years

The exhibition of fat stock was a new thing to the American people and it was not expected that the receipts for some years would be sufficient to meet the expenses

The results of the shows have been most gratifying to all interested and the marked improvement in the quality and style of the stock exhibited from year to year has demonstrated the necessity for and great benefits resulting therefrom

The first exhibition brought together a large proportion of overgrown steers patched and showing evidence of having passed their prime for quality and profit The popular and quite too common belief among feeders and breeders in reference to this class of cattle was corrected and severely rebuked by the judges who pronounced this class of cattle unprofitable for the feeder and butchers and very objectionable to the consumer

The second exhibition brought together a better class of cattle as a rule smooth and even showing remarkable growth for age and indicating the tendency of exhibiters in the direction of early maturity at the expense of quality

The selection of the less grouty animals having handling qualities indicating a firm mellow smooth thick meated carcass with the largest proportion of meat in the most valuable portions of the carcass favorably impressed the exhibiters and the public that the most rapidly matured animal was frequently lacking in the essential matters of quality

The third exhibition attracted cattle of an improved type shorter in leg finer in bone with better backs more evenly proportioned throughout and giving evidence of cutting to profit as well as furnishing the consumer with a superior quality of nicely marbled meat

The animals awarded premiums were such as promised the largest proportion of lean meat in the most valuable parts of the carcass to the gross weight

It was expected that the fourth exhibition would bring out a much more highly finished and profitable class of cattle for the butcher and consumer and all who had carefully watched the improvement from year to year were highly gratified at the magnificent show of superior bullocks that very nearly approached the highest standard of excellence

The matter of quality had evidently been the incentive with the feeder and the natural conditions so far as the best results would admit had been more carefully observed Exercise as well as grass and grain diet likely to develop a due proportion of lean meat and muscle had received more attention and while the profit to the producer may not have been so great as heretofore with cattle showing a large average gain per day there was little room for criticism on account of quality

The tendency with exhibiters at the first two shows to exhibit cattle of size and remarkable growth for age has been corrected and the superior quality now so earnestly sought by feeders should not influence the producer to lose sight of that medium line where the best quality and a reasonable profit to the breeder and feeder come together

It is not the purpose of the Board to encourage the production of meat at a loss and to enlighten all interested in the most economical methods of feeding consistent with the superior quality demanded I would recommend that premiums of at least $100 each be given to exhibiters of yearling two year old and three year old steers for the best results in feeding the application for entry to be accompanied with a verified statement giving the cost of production as well as the kind and quantity and value of food consumed from date of birth until the animal is shown

The expense attending the production of meat animals has received but little attention at the hands of stock men and until the cost of production is definitely known the respective merits of the several beef breeds of cattle where there is so slight a shade of difference in the quality of meat can not be satisfactorily determined

The time of opening and closing the exhibition heretofore has necessitated much inconvenience and expense to exhibiters in requiring them to remain in the city over two Sundays This trouble might be avoided by opening the show on Wednesday and closing on Thursday night of the next week

EXPERT COMMITTEEMEN

The importance of having competent judges to pass upon the stock on exhibition at the State Fair and Fat Stock Show has never been more apparent than during the past year The interests at stake are so great that the Board can not spare any reasonable expense or trouble in obtaining committeemen of unquestioned ability and integrity

The expense of employing experts is trifling compared with the benefits derived from having the large amounts of premiums offered awarded to the best animal or article on exhibition in the several rings and classes

There have been many egregious blunders unavoidably made in awarding premiums under the system heretofore followed and the Board can not afford to have their highest endorsement as to the quality of animals or merit of articles stamped upon inferior animals or unmeritorious articles and have the awards which are in some instances ridiculous advertised far and near as blunders on the part of the Illinois State Board of Agriculture in selecting committeemen

The Board in the end must bear all the responsibility for errors on the part of incompetent committeemen and the only protection is in securing men of standing and much practical experience in handling and breeding stock when they are called upon to pass judgment

Over ten thousand dollars is paid in premiums annually by this Board to the four classes of live stock and the danger of its improper disbursement should not be intrusted to men hurriedly picked up on the Fair Ground to serve as committeemen when the stock is ready for exhibition

It is a well known fact that but a very small number of the committeemen chosen according to the custom followed by the Board put in an appearance at the Fair and the best available judges to be found among the visitors at the Fair are frequently incompetent

The large expense incurred by exhibiters in showing their stock and the reputation of animals and breeders make the matter of an improper award an irreparable damage

CROP AND STOCK STATISTICS

The growth of the system of collebting and publishing crop and stock statistics has made unprecedented advancement during the past year not only in Illinois but in Ohio Iowa Kansas and in other States

The producers dealers and consumers of any State only need to have the opportunity for determining the value of such statistics to insist upon their regular and continued publication

The popularity and increasing importance of this work demands that no pains be spared to enlarge upon and improve the system adopted by this Board for the careful collection and prompt publication of the crop and stock statistics of the State

The collection by Assessors in May last of the acreage of the growing crops has enabled the Department the past season to use to much advantage the official returns giving the area of the several crops The advantage to the producers of this State and dealers generally in having the condition of the growing crops as well as the extent of the various crops as soon as harvested advertised throughout the world is generally admitted by all who have investigated this subject

The markets in all portions of the State are much improved by thus attracting the attention of dealers from a distance to any locality having a surplus

Other State Boards of Agriculture seeing the great benefits resulting from the collection and publication of crop and stock statistics have already taken or are about taking the necessary steps to give their people the advantages resulting therefrom and it is believed that at no distant date all the States will be united in the work of collecting and publishing all matters affecting the condition and extent of the grain crops as well as the supply of meat animals Crop and stock statistics not only inform the producer as to the supply and demand and the relative value of his surplus grain and meat but enable the dealer to determine where to obtain supplies for his customer who is also benefited in the protection against extortionate charges thus afforded by his knowledge of the extent of the supply and probable demand

The publication of the probable extent of the crops as reported during the growing season enables the producer in a great measure to determine the value of the crop before harvest which in case of shortage stimulates buyers to spirited competition and makes it easier to obtain from the consumer a fair consideration for the product

The early knowledge of the amount of grain and meat to be transported enables the railroad companies to provide ample facilities for shipping the product to market

MUSEUM

The Museum has proved a valuable investment as an advertisement of the agricultural resources of the State and visitors are constantly present examining the products on exhibition

The Museum Committee have taken the necessary steps to enlarge the present collection and show to better advantage the agricultural and mineral resources of the State

The Curator Miss Belle Bradford has discharged the duties of the office most acceptably and rendered valuable service in connection with the statistical and general work of the Department

The collection of books and periodicals in the Library has been increased during the past year and frequent use is made of the publications by farmers and others interested

It is recommended that a catalogue of the books magazines and catalogues be published for the convenience of visitors

Mr D C Hoyt in addition to his other duties has made an efficient Librarian

Ex-President Gillham was called to the chair.

On motion of Mr. Landrigan,

The President's address was referred to a committee of five to be appointed by the chair.

The chair appointed as said committee Messrs. Landrigan, Beaty, Dysart, Haskell and Snoad.

The minutes of the meetings of the Board held during the week of the State Fair, at Peoria, September 26 to October 1, 1881, were read, and,

On motion of Mr. Gillham,

Adopted.

The minutes of the meetings of the Board held during the week of the Fat Stock Show, held in Chicago, November 7-12, 1881, were read, and,

On motion of Mr. Snoad,

Adopted.

The Secretary made the following annual report, which was,

On motion of Mr. Gillham,

Received, and placed on file

(See Secretary's Report, in Appendix.)

President Scott resumed the chair.

Motion of Mr. Pullen carried,

That the recommendations of committees on miscellaneous awards at the late Fair be referred to a special committee of three, to be appointed by the President.

The President appointed as said committee, Messrs. Pullen, Haskell and David.

The reports of standing committees being next in order, the following reports were received and adopted:

REPORT OF COMMITTEE OF ARRANGEMENTS, ILLINOIS STATE FAIR.

To the State Board of Agriculture

The Committee of Arrangements for the State Fair beg leave to submit the proceedings of the two meetings held by the committee during the past year as a report

Respectfully submitted

JAMES R. SCOTT　　SAMUEL DYSART
D. B. GILLHAM　　B. PULLEN
W. M. SMITH　　JOHN LANDRIGAN
D. W. VITTUM　　D. T. BEATY
J. T. MOORE　　GEO. S. HASKELL
EMORY COBB

MINUTES OF THE MEETINGS OF THE COMMITTEE OF ARRANGEMENTS FOR THE STATE FAIR

PEORIA HOUSE, PEORIA,
May 12, 1881, 9 O'clock A. M.

Committee of Arrangements met pursuant to call of the Chairman.

Present—Chairman Scott, Messrs. Gillham, Moore, Vittum, Smith, Pullen, Beaty and Haskell.

On motion of Mr. Beaty,

Mr. Fisher was made Secretary of the committee.

On motion of Mr. Gillham,

The committee repaired to the Fair Grounds for the purpose of inspecting the grounds and buildings.

At 2 o'clock P. M., the committee was called to order at the Peoria House.

On motion of Mr. Vittum,

The specifications were taken up by number, and the improvements on the grounds considered and the following action taken:

1. The grounds, fences and entrances to be put in proper condition as noted in the specifications.

2. Additional stalls for cattle to be constructed to complete requirements, and stalls on the grounds to be put in good repair.

3. Additional stalls for horses to be constructed to meet requirements; stalls on the grounds to be put in order.

4. Closed stalls, as specified, to be constructed, and all to be numbered and whitewashed.

5. Hog pens now made will be accepted when repaired; the additional pens to meet the requirements to be made 8 feet high in front and 5½ feet high at the rear.

6. The three hundred sheep pens on the grounds will be accepted when put in repair.

7. The Exhibition Hall on the grounds accepted for the space it contains; an additional hall required, to cover the remainder of the superficial space named in the specifications.

8. Poultry shed to be enlarged and provided with tables as specified.

9. The buildings on the grounds accepted for offices of the President, Secretary, Auditing Committee and General Superintendent.

The building known as the Secretary's office to be partitioned with apartments for the Secretary, General Superintendent and Auditing Committee.

10. Treasurer's office accepted.

11. Office for Superintendents of Sheep and Swine to be constructed and furnished as specified.

12. Press and committee room accepted.

13. Carriage shed accepted when repaired.

14. Ladies' drawing room to be enlarged, and furnished with specified accommodations.

15. Amphitheatre to have additional seating capacity.

16. Judges' stand to be moved back from the track, and to be surrounded with show ring, as described in specification 19

17. Granary on the ground accepted.

18. Additional privies to be constructed and properly distributed.

19. Driving track to be put in condition.

20, 21 and 22. Supply of water, straw and transportation facilities to be provided, as specified.

Space was assigned the various departments in the halls as follows·

Old Exhibition Hall—
North wing—Class H, Sec. 2—Horticulture.
South wing—Class N—Education; and Class I—Fine Arts.
East wing—Class H, Sec. 2—Floriculture.
West wing—Class K—Textile Fabrics.

New Exhibition Hall—
North, East and West wings—Class F, Sec. 1—Mechanics.
South wing—Class G—Farm Products

On motion of Mr Moore,
Committee adjourned, subject to call of the Chairman.

FAIR GROUNDS, PEORIA,
August 25, 1881, 9 O'clock A. M.

Committee of Arrangements met, pursuant to call of Chairman Scott.

Present—Chairman Scott, Messrs. Gillham, Moore, Vittum, Dysart, Smith, Pullen, Landrigan, Beaty and Haskell.

Minutes of meeting of May 12 read and approved.

On motion of Mr. Gillham,
The Auditing Committee and Superintendent of Grounds were authorized to locate dining halls and refreshment stands

The committee then proceeded to inspect the grounds and improvements; after which,
On motion of Mr. Smith,
The committee adjourned, to meet in same place at 2.30 P. M

AFTERNOON SESSION.

The committee met, as per adjournment.
Present as before

On motion of Mr Landrigan,
The General Superintendent was authorized to engage necessary livery for the use of the Board during the week of the Fair.

On motion of Mr. Gillham,
The General Superintendent was directed to secure an ample supply of good drinking water, and have the same distributed at convenient points on the grounds during the week of the Fair.

On motion of Mr Gillham,
The Printing Committee was authorized to expend not to exceed $300 in local advertising of the Fair, and not to exceed $100 in the Chicago and St. Louis papers.

On motion of Mr. Pullen,
The committee adjourned, subject to the call of the Chairman.

S. D. FISHER,
Secretary.

JAMES R. SCOTT.
Chairman.

REPORT OF COMMITTEE OF ARRANGEMENTS—FAT STOCK SHOW.

To the State Board of Agriculture

The committee entrusted with the completion of arrangements for the Fat Stock Show submit the minutes of the meetings held by the committee as a report

Respectfully

JAMES R SCOTT
D B GILLHAM
E COBB
W M SMITH
D W VITTUM
SAMUEL DYSART
J L MOORE

MINUTES OF MEETINGS OF THE COMMITTEE OF ARRANGEMENTS FOR THE FAT STOCK SHOW

GRAND PACIFIC HOTEL CHICAGO
March 15 1881 10 O clock A M

Committee met pursuant to call of the Chairman

Present—Chairman Scott Messrs Gillham Cobb Vittum and Dysart

Motion of Mr Dysart carried

That the same classification of premiums for cattle be adopted as in 1880 with a first, second and third premium of $30 $20 $10 respectfully in lots 1 2 3 4 and 5

Motion of Mr Gillham carried

That a sweepstakes ring be made for dressed carcasses with a premium of $75

Motion of Mr Cobb carried

That there be a second premium for early maturity and that the premiums be made $50 for first and $25 for second premium

Motion of Mr Vittum carried

That a third premium of $25 be offered for heaviest fat steer

Motion of Mr Vittum carried

That the classification of premiums for sheep of the various breeds and crosses be made the same as last year with first second and third premiums as follows $12 $8 and $5—lots 17 18 19, 20 and 21 to remain as heretofore

Motion of Mr Dysart carried

That a first second and third prize of $12 $8 and $5 be offered for swine in lots 22 23 24 25 and 26 that old lots 27 28 and 29 remain the same as last year and that a second premium of $30 be offered for the heaviest fat hog

Adjourned until 8 o clock P M

EVENING SESSION

Committee met pursuant to adjournment

Present—Chairman Scott Messrs Gillham Cobb Vittum Dysart Moore and Beaty

Motion of Mr Gillham carried

That $190 be offered as premiums for fat poultry—the classification to be left with the Superintendent of Class F Poultry

The following rules and regulations were adopted for the next Show

GENERAL RULES AND REGULATIONS

The Exposition Building will be open for the reception of Stock on Wednesday the 2d day of November 1881

ENTRIES

1 Must be made on or before November 1st by application to the Secretary at Springfield who will furnish blank applications on which to specify exhibiter s name and address with age and description of the animal offered

2 In all thoroughbred classes authentic pedigrees must be furnished Statements showing so far as known the proportion of improved blood in each animal exhibited in lots for grades or crosses must be furnished at time of entry

3 The following fees will be charged and must accompany applications for entries For each horse stall $5 for each cattle stall $2 for each sheep or hog $1 for each fowl or chick 50 cents and for each pen for car lots of hogs or sheep $5

4 Each exhibiter must purchase an *Exhibitor s Ticket* ($1 50) when applying for entries, (a firm being regarded as one exhibiter Only one member of the firm will be admitted to the Building on the ticket which entitles the firm to compete

5 Every animal must be entered for competition in the name of the owner

6 A card will be furnished the exhibiter at time of making entry specifying the Class the number of the Lot and the number of the entry which card must remain attached to

the animal during the exhibition, except in Classes C D and E where the card must be attached to the pen or coop

7 Diligence will be used by the officers of the Board to prevent injury to or loss of property but they will not be responsible for any damage or loss that may occur

ANIMALS

1 No animal can be removed until the close of the Exhibition, except for adequate cause and then only on the order of the General Superintendent

2 Stock must be in the stalls or pens in the Exposition Building Chicago, not later than Friday November 4 1881 in order that they may be weighed, numbered and catalogued, previous to the opening of the show

3 Cattle must be well halter broken, and vicious animals will not be admitted to the Building

4 The animals to be slaughtered will be placed in charge of the Superintendent of the Departments in which they are entered Monday morning of the Show, in order that they may receive the same feed and care until the day of slaughter

5 Butchers stock only will be eligible to compete for premiums, and animals that are to be used hereafter for breeding purposes will be excluded from competition

6 The Superintendent may exclude stock from competition, should there be any unnecessary delay on the part of the exhibitors in bringing animals into the show ring

7 The animals for slaughter will be killed dressed and weighed under direction of the Awarding Committee The premium in each ring will be awarded that animal whose dressed carcass is of the highest market value in proportion to live weight The dressed carcass to remain the property of the exhibitor

8 Animals affected by or having been exposed to any contagious disease during the thirty days next preceding the Fat Stock Show of 1881 will be excluded from the Exposition Building

AWARDING COMMITTEES

1 Awarding Committees will consist of three for each Lot, and three for class sweepstakes rings

2 Awarding Committees will commence examination on Monday November 7th, at 9 o clock A M and continue until awards are completed

3 No person shall act as judge in any Lot in which he may be interested as an exhibitor the agent or employe of an exhibitor or otherwise

4 No animal deemed unworthy shall be awarded a premium, but no premium shall be withheld merely because there is no competition

5 In case of protest notice must be given to the Superintendent of Department before or during the examination of the animal or article protested and a written statement, setting forth the reasons for protesting verified by affidavit must be filed with the Secretary on the day the notice is given

6 In all cases where protests are entered for improper or malicious purposes, the Board will exclude said party protesting from exhibiting for two years thereafter

7 Any exhibitor who shall tear off a premium ribbon, or authorize another person to do so in the presence of the Awarding Committee or shall otherwise insult the Awarding Committee shall forfeit the premium and be excluded from competition

8 The judges will report only upon the animals or articles entitled to premiums in the regular list

9 Judges in making awards will consider only animals in good condition for slaughter

10 All awards shall be made by ballot without consultation In case of a tie vote or failure to obtain a majority vote necessary to an award the Superintendent of the Department shall at once report the same to the President who with any other two members of the Board shall appoint an additional judge or judges as may be necessary, whose examination shall be confined to the entries having received votes The animal or herds previously voted for shall be separated from other stock in the ring and the premium shall be awarded to the entry first receiving a vote equal to a majority of the original committee

11 The judges are instructed to award premiums to such animals as present the greatest weight in the smallest superficies—taking into consideration age, the quality of flesh and its distribution in the most valuable portions of the carcass

12 Awarding Committees are instructed that if they have good reason to believe that any exhibiter by false entry or otherwise attempts to deceive the committee or the public, and obtain an award by misrepresentation, they shall report the fact at once to the Superintendent of the Department who shall report the same to the Board, who may expel such exhibiter for fraud for at least two years

13 Each award (and notice of protest, if any is made) must be written in a plain, careful manner by the Superintendent, in blank page opposite the entry

14 The entry books must be returned by the Superintendent of each Department to the Secretary as soon as the awards in each are completed

15. Great care must be exercised to preserve the Awarding Committees' books, and the awards must be entered as above, in a plain, legible manner, in the proper place, as the premiums will be paid on authority of these entries *only*.

16. Superintendents will be particular to observe the following *Blue Ribbons* are designed for first premiums; *Red Ribbons* for second premiums, *White Ribbons* for third premiums

17. Decisions of Awarding Committees shall be final, and no appeal will be considered except in cases of fraud and protests.

18. Objections to a person serving as a member of an Awarding Committee must be submitted to the Superintendent in writing before the committee enters upon its duties, and give good and sufficient reasons therefore.

19. Any exhibiter attempting to interfere with judges during their adjudications, will be promply excluded from competition.

AUDITING COMMITTEE

1. The Auditing Committee will have charge of the gates and tickets, (except complimentaries) and permits.

2. *All bills against the State Board must be made in detail*; and all bills contracted during the show, or in immediate preparation therefor, must be certified by the Superintendent on whose order the service or material was furnished, and must be approved and signed by a majority of the Auditing Committee, before they can be paid by the Treasurer.

3. The Auditing Committee will make, on the requisition of Superintendents of Departments, any necessary purchases of material (except forage), and employ any service required except Assistant Superintendents and Police.

GENERAL SUPERINTENDENT.

1. The General Superintendent will have charge of the Building and Police. He will have an efficient Police force on duty day and night, and will assign such number of Policemen to the Superintendents of Departments as they may require.

SUPERINTENDENT OF STALLS AND FORAGE.

1. The Superintendent of Forage and Stalls will designate the hours of delivery of feed, forage and bedding for animals on exhibition, which can be obtained on application to him, at reasonable rates Stalls and pens must be cleaned before 8 o'clock A. M., and again between the hours of 5 and 7 P. M., each day.

ADMISSION FEES.

1 Exhibiter's tickets, good during the show, $1.50. Tickets admitting one person once, 25 cents. Tickets admitting children under twelve years old, 15 cents.

CLASS A—CATTLE.

The Exposition Building will be open for the reception of stock on Wednesday, the 2d day of November, 1881

ENTRIES.

1 Must be made on or before November 1st, by application to the Secretary, at Springfield, who will furnish blank applications on which to specify exhibiter's name and address, with age and description of the animal offered.

2 In all thoroughbred classes, recorded pedigrees, or such as are eligible to record must be furnished at time of entry Statements showing the proportion of improved blood in each animal exhibited in lots for grades or crosses, must be furnished at time of entry.

3. The following fees will be charged and must accompany applications for entries For each horse stall, $5; for each cattle stall, $2; for each hog or sheep, $1, for each fowl or chick, 50 cents, and for each pen for car lots of hogs or sheep, $5.

4. Each exhibiter must purchase an exhibiter's ticket ($1.50) when applying for entries a firm being regarded as one exhibiter, only one member of the firm will be admitted to the building on the ticket which entitles the firm to compete.

5 Cattle must be in their stalls in the Exposition Building, Chicago, not later than Friday, November 4, 1881, in order that they may be weighed, numbered and catalogued previous to the opening of the show.

6. Cattle must be well halter-broken, and vicious animals will not be admitted to the building.

7. The bullocks to be slaughtered will be placed in charge of the Superintendent of the Department in which they are entered Monday morning of the show, in order that they may receive the same feed and care until the day of the slaughter.

8. *The bullocks for slaughter* will be killed, dressed and weighed under the direction of *the Awarding Committee.* The premium in each ring will be awarded that bullock whose dressed carcass is of the highest market value in proportion to live weight. The dressed carcass to remain the property of the exhibiter.

9. Animals competing for premiums in Lot 11, Heaviest Fat Steer, and Lot 12, Early Maturity, will be kept off of feed and water twelve hours before making the award, by the Superintendent of the Department.

10. Butcher's stock only will be eligible to compete for premiums, and animals that are to be used hereafter for breeding purposes will be excluded from competition.

11. Cattle shown in Lot 8, Car-loads, to weigh at the Exposition Building as follows. Steers three and under four years, not less than 1,800 pounds each; steers two and under three years, not less than 1,500 pounds each; steers one and under two years, not less than 1,200 pounds each.

12. All awards shall be made by ballot without consultation.

CLASS B—HORSES.

The Exposition Building will be open for the reception of Stock on Wednesday, the 2d day of November, 1881.

ENTRIES.

1. Must be made on or before November 1st, by application to the Secretary, at Springfield, who will furnish blank application on which to specify exhibiter's name and address, with description of the animal offered.

2. In all thoroughbred classes, authentic pedigrees must be furnished. Statements showing the proportion of improved blood in each animal exhibited in lots for grades and crosses must be furnished at the time of entry.

3. The following fees will be charged, and must accompany applications for entries: For each horse stall, $5, for each cattle stall, $2, for each hog or sheep, $1; for each fowl or chick, 50 cents, and for each pen for car-lots of hogs or sheep, $5.

4 Each exhibiter must purchase an exhibiter's ticket ($1.50), when applying for entries, a firm being regarded as one exhibiter; only one member of the firm will be admitted to the building on the ticket.

LOT 13—FOR HORSES ON EXHIBITION

No premiums will be awarded to horses, nor examination made by committee, but every facility will be afforded for exhibition.

No exhibiter will be permitted to show more than ten horses.

CLASS C—SHEEP.

The Exposition Building will be open for the reception of stock on Wednesday, the 2d day of November, 1881.

ENTRIES.

1. Must be made on or before November 1st, by application to the Secretary at Springfield, who will furnish blank applications on which to specify exhibiter's name and address, with description of the animal offered

2. In all thoroughbred classes, authentic pedigrees must be furnished. Statements showing the proportion of improved blood in each animal exhibited in lots for grades and crosses, must be furnished at the time of entry.

3. The following fees will be charged, and must accompany applications for entries: For each horse stall, $5; for each cattle stall, $2; for each hog or sheep, $1; for each fowl or chick, 50 cents, and for each pen for car-lots of hogs or sheep, $5.

4 Each exhibiter must purchase an exhibiter's ticket ($1.50), when applying for entries, a firm being regarded as one exhibiter; only one member of the firm will be admitted to the building on the ticket which entitles the firm to compete.

5. Sheep must be in their pens in the Exposition Building, Chicago, not later than Friday, November 4th, 1881, in order that they may be weighed, numbered and catalogued previous to the opening of the show.

6 Sheep to be slaughtered will be placed in charge of the Superintendent of the Department (Class C), Monday morning of the show, in order that they may receive the same feed and care until the day of slaughter The sheep entered for slaughter will be killed, dressed and weighed under direction of the Awarding Committee. The premium in each ring will be awarded to the sheep whose dressed carcass is of the highest market value in proportion to live weight, also taking into consideration the value of the pelt. The dressed carcass to remain the property of the exhibiter.

7. Animals competing for premiums in Lot 20—Heaviest Fat Sheep—will be kept off of feed and water twelve hours before making the award

8 Butchers' stock only will be eligible to compete for premiums and animals that are to be used hereafter for breeding purposes will be excluded from competition

9 All awards shall be made by ballot without consultation

CLASS D—SWINE

The Exposition Building will be open for the reception of Stock on Wednesday, the 2d day of November, 1881

ENTRIES

1 Must be made on or before November 1st by application to the Secretary, at Springfield who will furnish blank applications on which to specify exhibiter s name and address with description of the animal offered

2 In all thoroughbred classes authentic pedigrees must be furnished Statements showing the proportion of improved blood in each animal exhibited in lots for grades or crosses, must be furnished at time of entry

3 The following fees will be charged and must accompany applications for entries For each horse stall $5 for each cattle stall $2, for each hog or sheep $1, for each fowl or chick 50 cents and for each pen for car lots of hogs or sheep $5

4 Hogs must be in their pens in the Exposition Building Chicago not later than Friday, November 4 1881 in order that they may be weighed numbered and catalogued previous to the opening of the show

5 Animals competing in Lot 30 Heaviest Fat Hog will be kept off of feed and water twelve hours before making the award

6 All awards shall be made by ballot, without consultation

7 Butcher s stock only will be eligible to compete for premiums, and animals that are to be used hereafter for breeding purposes as well as stags and pigy sows will be excluded from competition

8 Each exhibiter must purchase an exhibiter's ticket ($1 50) when applying for entries, a firm being regarded as one exhibiter only one member of the firm will be admitted to the building on the ticket which entitles the firm to compete

CLASS E—POULTRY

1 The Exposition Building will be open for the reception of stock on Wednesday the 2d day of November, 1881

ENTRIES

1 Must be made on or before November 1st by application to the Secretary at Springfield who will furnish blank applications on which to specify exhibiter s name and address, with description of the animal offered

2 In all thoroughbred classes authentic pedigrees must be furnished Statements showing so far as known the proportion of improved blood in each animal exhibited in lots for grades or crosses must be furnished at time of entry

3 The following fees will be charged and must accompany applications for entries For each horse stall $5 for each cattle stall $2 for each hog or sheep, $1 for each fowl or chick 50 cents and for each pen for car lots of hogs or sheep, $5

4 Each exhibiter must purchase an exhibiter s ticket ($1 50) when applying for entries a firm being regarded as one exhibiter Only one member of the firm will be admitted to the building on the ticket which entitles the firm to compete

5 All awards shall be made by ballot without consultation

6 The terms fowl ' chick etc are thus defined Fowl—a bird hatched prior to 1881, Chick—a bird hatched during 1881 Cock—a male bird hatched prior to 1881 Cockerel—a male bird hatched during 1881, Hen—a female bird hatched prior to 1881, Pullet—a female bird hatched during 1881

7 Coops should be of the following dimensions For Turkeys and Geese 3½ feet high, 3 feet wide, 4 feet long, fowls, 23 inches high, 20 inches wide and 30 inches long

CLASS F—MECHANICS

LOT 39—MACHINES IMPLEMENTS AND UTENSILS

Manufactures and dealers in implements utensils and other objects used in connection with butchering live stock packed meats and dairying in all its branches will be given all available space by paying five dollars each as an entry fee and obtaining the necessary permit from the Auditing Committee

On motion of Mr Gillham

The Chairman was authorized to appoint a committee to solicit subscriptions for the expense and premium fund of the next Fat Stock Show

Chair appointed as said committee Messrs Cobb Smith Dysart Moore and Fisher
On motion of Mr Dysart
The Secretary was instructed to have published 2 000 extra copies of the premium list of the Fat Stock Show
On motion of Mr Cobb
Committee adjourned subject to call of Chairman

GRAND PACIFIC HOTEL CHICAGO
October 11 1881 9 A M

Committee met pursuant to call of the Chairman
Present—Chairman Scott Gillham and Moore
On motion adjourned to meet at Exposition Building at 11 o clock A M

EXPOSITION BUILDING CHICAGO,
October 11 1881 11 O clock A M

Committee met pursuant to adjournment
Present—Chairman Scott Gillham Moore and Vittum
On motion of Mr Vittum
Mr Moore was authorized to make contract for making stalls and pens and preparing Exposition Building for the show
On motion adjourned to 3 o clock P M

AFTERNOON SESSION—THREE O CLOCK

Committee met as per adjournment
Present—Chairman Scott and Messrs Gillham Moore and Vittum
On motion of Mr Gillham
The committee proceeded to ballot for judges for the Show with the following result

J Dallenbach	Champaign	Champaign Co
James Peltz	Polo	Ogle Co
J F Briggs	Downer s Grove	DuPage Co
George Metzger	Springfield	Sangamon Co
H A Heinemann	Belleville	St Clair Co
A Knornschild	Oregon	Ogle Co
A S Trostle	Franklin Grove	Lee Co
Thomas Irwin	Bloomington	McLean Co
J H Bunn	Peoria	Peoria Co

On motion of Mr Vittum
The Secretary was directed to notify the judges of their appointment and inform them that the Board would furnish transportation and pay hotel bills
On motion of Mr Gillham
The President and Secretary were authorized to make best possible rates with the railroads for excursion rates to the Fat Stock Show and for the posting of bills along the lines leading into Chicago
Mr Moore submitted the following proposition of Charles Brown of Chicago for making stalls etc
One hundred or more horse or cattle stalls at $2 each
One hundred or more hog and sheep pens at $1 25 each
Remove all platforms and stands (except three) and replace the same at the close of the Show build tables for the chicken coops construct show ring make partition fence dividing south half building cleaning and lighting building during the Show and arranging the building after the Show to the satisfaction of the Exposition Company for $250
The above includes all expenses in connection with removing and replacing the stands platforms etc occupying the north end of the Exposition Building and the loss in cutting up of lumber
On motion of Mr Vittum
The proposition of Mr Charles Brown was accepted
Mr Gillham introduced the following resolution which was adopted

Resolved That the Secretary have printed three hundred complimentary tickets to the Fat Stock Show that the officers and members of the Board be furnished ten each and that the remaining tickets be placed in the hands of the President to be distributed at his pleasure that five hundred press tickets be printed and furnished to the papers of this and adjoining States

On motion of Mr Moore
Mr Reynolds was authorized to make arrangements for music during the week of the show
The committee on subscriptions reported that the following subscriptions had been secured to the general premium fund of the Fat Stock Show for 1881

Union Stock Yards and Transit Co	$3 000 00
Marshall Field	200 00
John B Drake & Co	150 00
Selz Schwab & Co	100 00
C M Henderson & Co	50 00
Keith Bros	50 00
John V Farwell & Co	100 00
C Gossage & Co	25 00
L J Lehman	25 00
L Adams & Co	15 00
Warren F Leland	25 00

Special premiums have been offered as follows:

CLASS A—CATTLE.

Best five head of Cattle, any age or breed—
Marshall Field, Chicago $250 00

LOT 6—SWEEPSTAKES RING.

Best Steer 3 and under 4 years—
Borden, Selleck & Co., Chicago An 800 lb. improved Howe platform scale, value, 38 00

Best Steer 2 and under 3 years—
Schuttler & Hotz, Chicago .... Farm wagon; value. 115 00

Best Steer 1 and under 2 years—
Western Rural, Chicago 15 00

LOT 7—GRAND SWEEPSTAKES.

Best Steer or Cow in the Show—
Farmers' Review Co., Chicago ....Gold medal, value, 50 00

CLASS C—SHEEP.

Best five head of Sheep, any age or breed—
Marshall Field, Chicago $125 00

LOT 19—GRAND SWEEPSTAKES.

Best Wether or Ewe in the Show—
National Live Stock Journal Co., Chicago ....Challenge cup; value, 50 00

CLASS D—SWINE.

Best five head of Hogs, any age or Breed—
Marshall Field, Chicago 125 00

LOT 29—GRAND SWEEPSTAKES.

Best Barrow or Sow in the Show—
Western Rural, Chicago 15 00

LOT 31—CAR LOADS.

Best car-load 30 Fat Barrows 1 and under 2 years—
Prairie Farmer Co., Chicago .U S Standard Scale, made by Chicago Scale Co. 75 00

On motion of Mr. Moore,
The committee adjourned, subject to call of the President

REPORT OF RECEPTION COMMITTEE.

To the State Board of Agriculture

The Reception committee, in addition to their usual duties, had the honor and pleasure of entertaining, among other prominent agriculturists, Hon. George B. Loring, Commissioner of Agriculture, during a portion of the week of the late Fair.

The unusually large number of prominent farmers, breeders and business men in attendance at the recent Fair was most gratifying.

The interest manifested in the success of the Fair and the general work of the department by all present, is evidence of the appreciation of the efforts of the Board to promote the interests of all engaged in agriculture.

It is suggested that in future specifications of requirements, the locality securing the Fair be obligated to locate the President's office next to the show-ring, where the guests of the Board may have an opportunity of seeing to better advantage the stock on exhibition.

The President's office should be two stories high, with a covered veranda on the second floor fronting the show-ring.

Respectfully submitted,

JAMES R. SCOTT, Chairman.

REPORT OF PRINTING COMMITTEE.

To the State Board of Agriculture:

The Printing committee have expended during the past year, for printing and stationery, the sum of $2,964.90, in connection with the State Fair, Fat Stock Show and the work of the department.

Of this amount $1,393.26 was expended in connection with the Fair and department work, $531.73 for the Fat Stock Show, and $1,039.91 in the collection and publication of the Crop Reports.

The following statement gives the items making up the above amount.

Respectfully submitted,

JAMES R. SCOTT,
J. L. MOORE,
S. D. FISHER.

SPRINGFIELD JOURNAL COMPANY.

Printing	$23 00
December crop blanks	12 00
Circulars	2 75
Blanks	13 00
Tile-makers' R. R. certificates	2 50
Vouchers, etc	21 00
Letter-heads, envelopes, etc	71 00
Printing postals, envelopes, etc	26 75
Entry-books and cards, blanks, etc	82 14
Tickets, badges, etc	38 75
Premium list State Fair and Fat Stock Show	444 00
Cards for stalls, etc	12 75
Total	$749 64

SPRINGFIELD REGISTER COMPANY.

December, 1880, Crop Report, 3,000 copies	$245 00
May crop blanks	8 00
May Crop Report, 3,000 copies	89 00
June crop blanks	10 00
June Crop Report, 3,000 copies	177 25
July crop blanks	10 00
July Crop Report, 3,000 copies	86 00
August crop blanks	10 00
August Crop Report, 3,000 copies	297 75
Printing postals	4 00
Shipping labels	2 00
400 blank reports of County Agricultural Boards	12 00
Circulars, etc	8 00
Total	$959 00

T. W. S. KIDD, SPRINGFIELD.

Meteorological blanks	$4 75
Labels, orders on treasurer, etc	21 00
Total	$25 75

SPRINGFIELD PRINTING COMPANY.

Electrotype plates, and map of Illinois	$17 00
Complimentary slips, State Fair	2 00
Total	$19 00

H. W. ROKKER, SPRINGFIELD.

Printing, envelopes, etc	$9 50
Printing and stationery	75 85
Total	$85 35

JOHN B. JEFFREY, CHICAGO.

Posters	$313 13

J. B. BROWN, SPRINGFIELD.

Printing and stationery	$63 44

J. M. W. JONES STATIONERY AND PRINTING COMPANY, CHICAGO.

Complimentary tickets, vouchers, etc	$30 00
Coupon tickets, meal tickets, permits, etc	120 03
Total	$150 03

J. K. MAGIE & CO., CHICAGO.

Circulars, etc., Fat Stock Show	$8 85

PEORIA TRANSCRIPT COMPANY.

Blank applications for entry, State Fair	$25 50

RAND, M'NALLY & CO., CHICAGO.

Catalogue of stock, Fat Stock Show	$123 50
Admission tickets, Fat Stock Show, etc	16 00
Posters	320 00
Total	$459 50

D. H. TRIPP & CO., PEORIA.

Stationery, State Fair	$2 95

CULVER, PAGE & HOYNE, CHICAGO.

Blanks for agricultural statistics	$6 00

SUNDRY.

Printing and stationery	$96 76
Grand total	$2,964 90

REPORT OF COMMITTEE ON MUSEUM.

To the State Board of Agriculture

The Museum committee has made application for a collection of the merchantable woods of the State, specimens of the coals, potter's clays, kaolin, building stone and glass sands. The completion of the collection of domestic fowls is desirable, and steps have been taken to accomplish this result

It is recommended that liberal premiums be offered at the next Fair for free-hand drawings of farm buildings, including dwelling houses, barns and out buildings, and that the plans receiving the awards be suitably framed and placed on the walls of the museum and other rooms of the department.

Application has been made for paintings, lithographs, engravings and drawings of of domestic animals, that the owners are willing to donate to the department.

Respectfully submitted,

JAMES R. SCOTT,
D. B. GILLMAM,
S. D FISHER.

REPORT OF COMMITTEE ON TRANSPORTATION.

To the State Board of Agriculture·

The committee beg leave to report that the usual concessions in the way of excursion rates and reduced freights were granted by the leading railroads of the State to exhibiters and visitors attending the State Fair and Fat Stock Shows of 1881.

The hearty cooperation on the part of the railroads in the work of developing the agricultural resources in connection with the State Fair and Fat Stock Show, as well as increasing the interest in farm drainage, road making and other matters, has materially aided, and been of great service to, the Board and all interested in agriculture.

The mutual dependence of the producer and railroad managers upon the extent of the crops, makes it equally important to the farmer and carrier that large crops be grown, and that such reasonable rates be given in shipping to market as will leave a fair margin of profit with the grower, with which to improve his land, enlarge upon his farming operations, and thus be enabled to increase the amount of grain and live stock for export.

It is recommended that the Secretary be instructed to communicate to the following railroads granting excursion and reduced freight rates to exhibiters and visiters to the Fair and Fat Stock Shows during the past year, the thanks of this Board for the material assistance thus rendered.

Respectfully submitted,

JAMES R. SCOTT,
D. B. GILLHAM,
W. M. SMITH,
D. W. VITTUM, JR.,
S. D. FISHER.

Railroad Arrangements State Fair 1881

Rock Island & Peoria Peoria Decatur & Evansville Chicago Pekin & Southwestern Peoria Pekin & Jacksonville Illinois Midland Springfield & Northwestern Jacksonville Southeastern Chicago & Iowa	Passengers one and one-fifth fare for the round trip Freight will be charged full rate to the fair and returned free to points whence shipped on certificate of the Secretary that the same has been on exhibition, and has not changed ownership
Chicago & Alton Illinois Central Chicago Burlington & Quincy Chicago Rock Island & Pacific Wabash St Louis &Pacific	Passengers one and one third fare for the round trip Freight will be charged full rate to the fair and must be prepaid, when it will be returned free to points whence shipped on certificate of the Secretary that the same has been on exhibition, and has not changed ownership
Chicago & Northwestern	Passengers one and one half fare for the round trip Freight must be prepaid at full rates to the fair and will be returned free to points on this road whence shipped on certificate of the Secretary that the same has been on exhibition and has not changed ownership
Ohio & Mississippi	Passengers at one and one third rates for the round trip from points on Springfield division and main line between Lawrenceville and Flora Freight will be charged full rates to the fair and returned free to points whence shipped on certificate of the Secretary that the same has been on exhibition and has not changed ownership
Vandalia Line	Freight will pay full rates going and be returned free on certificate of the Secretary that the same has been on exhibition and has not changed ownership
Indiana Bloomington & Western	Passengers 4 cents per mile one way for the round trip Freight must be prepaid at tariff rates at the point of shipment to the fair and will be returned free to point whence shipped on certificate of Secretary that the same has been on exhibition ownership being unchanged
Indianapolis & St Louis	Freight from any station in Illinois at full tariff rates and returned to points of shipment free on certificate of Secretary that the same has been on exhibition and has not changed ownership

Arrangements to cover only points in Illinois

As nearly all the railroads require prepayment of freight at the station whence shipped a receipted bill should be taken for the same which should be CERTIFIED BY THE SECRETARY ON THE GROUNDS as early as Thursday of the Fair

THE UNITED STATES EXPRESS CO and the AMERICAN EXPRESS CO will each have an office on the Fair Grounds and will receive and deliver there all matter sent or received by express without extra charge

Railroad Arrangements for Fat Stock Show 1881

Michigan Central *Lake Shore & Michigan Southern	Will carry stock to Chicago at local rates and refund one half of the amount paid on presentation of Secretary s certificate that the stock has been on exhibition
Chicago & Northwestern Chicago Rock Island & Pacific Illinois Central Chicago & Alton Chicago, Burlington & Quincy Chicago & Iowa Chicago, Pekin & Southwestern Chicago & Eastern Illinois Wabash, St Louis & Pacific	Will carry stock to Chicago at regular tariff rates and refund one third of the amount paid on presentation of Secretary s certificate that the stock has been on exhibition

*Arrangements to apply to stock shipped in car loads, or in lots of four animals or more, the revenue of the road in no case to be made less than $12 for 100 miles or less, $15 for distances between 100 and 200 miles, and $20 for distances between 200 and 300 miles

Paid freight bills with Secretary's certificate should be presented to the railroads when applying for a rebate in freight.

These concessions are made upon condition that the roads are released from any and all liability exceeding $50 per head, in case of injury by accident or otherwise, while in transit, or while awaiting shipment or delivery at stations.

REPORT OF COMMITTEE ON MISCELLANEOUS AWARDS.

To the State Board of Agriculture

Your committee to whom was referred the awards recommended by awarding committees on miscellaneous entries at the late Fair, have examined and duly considered the action of the judges, and submit for the approval of the Board the following list of commendations, etc

Respectfully submtted,

B. PULLEN,
G. S. HASKELL,
E. B DAVID.

MISCELLANEOUS AWARDS.

CLASS F—MECHANICS—SECTION 1.

WM. VOORHIES, *Superintendent.*

LOT 81—STOVES, CASTINGS, WORKED METALS, ETC.

Vapor Stove
Hull Vapor Stove Co , Cleveland, O .... Diploma

Hall's Safe·
By O A. Cavan, Agt. Hall's Safe and Lock Co., at El Paso, Ill .... Diploma

Gas Machine
Couch & Sanders, Peoria .... Diploma

Covert's Paragon Extension Step Ladder
Lewis B. Covert, Cedar Rapids, Ia .... Diploma

Street Lamp
O'Brien Bros., Peoria .... Diploma

LOT 82—HOUSEHOLD FURNITURE.

Butter Worker
Cornish & Curtis, Fort Atkinson, Wis .... Diploma

Flour Sifter and Safe:
H. Fletemeyer, Peoria .... Diploma

Creamer (Cooley)
John Boyd, Chicago .... Diploma

Dog-Power for Churn.
John Boyd, Chicago .... Diploma

Boot-Cleaner:
Novelty Manufacturing Co., Chicago .... Diploma

LOT 83—MANUFACTURES OF VARIOUS KINDS.

Bangs' Gas Machine:
Chas S. Cleaver, Chicago .... Diploma

Display of Buttons;
Hurt & Co., Peoria .... Diploma

Type Writer·
Justus F. Lindgreen, Peoria .... Diploma

Horse and Cattle Food.
American Stock Food Co., Chicago .... Diploma

Display of Yeast:
Waterloo Yeast Co., Waterloo, N. Y. .... Diploma

Tug Fastener:
L. B. Covert, Cedar Rapids, Ia. .... Diploma

Baking Powder:
D. C. Brown, Springfield, Ill. .... Diploma

CLASS F—MECHANICS—SECTION 2.

B. PULLEN, *Superintendent.*

LOT 85—ENGINES, MACHINERY, ETC.

Combined Underground Drain and Hydraulic Water Supply.
Chas. J. Hofland, Osco .... Commended

Warren Hog Waterer
W. A. Warren, Princeton .... Commended

Hoisting Power;
G. W. Gordon, Beverly, O. .... Commended

Rubber Bucket, for Chain Pump, Churchill's patent:
J. F. Temple & Sons, Chicago .... Commended

LOT 86—LIGHT MACHINES, ETC.

Common Sense Bee-Hive:
J. Barnes, Jacksonville .... Commendation

LOT 87—IMPLEMENTS, VEHICLES, ETC.

Road Cart:
W. S. Frazier & Co., Aurora .... Commended

Jump Seat.
H. J. Edwards & Sons, Chicago .... Diploma

Hay, Grain, Corn and Hog Rack
J. McCallum & Bro. Manufacturing Co., Chicago .... Commended

Barbed Wire Fence
Falson & Thomas, Bloomington .... Commended as No. 1

CLASS G—FARM PRODUCTS.

LOT 89—GRAINS AND SEEDS.

Display of Agricultural Products:
Union Pacific Railway Co .... Diploma

Sweet Corn:
J. P Beck, Peoria .... Highest commendation

Flax Seed
W. A. Bickett, Sibley .... Highest commendation

LOT 91—BUTTER, CHEESE, ETC.

Display of Dairy Salt:
American Dairy Salt Co., Syracuse, N. Y .... Highest commendation

Display of Beeswax:
Mrs. L. Harrison, Peoria .... Highest commendation

Orange Butter Color
S. L. Barnhardt, Potsdam, N. Y .... Highest commendation

CLASS I—FINE ARTS.

JOHN P. REYNOLDS, *Superintendent.*

LOT 102—PRINTING, ENGRAVING, ETC.

Exhibit of Bookkeeping by students of Business College:	
Business College, Jacksonville	Highest commendation
Exhibit of Penmanship by students of Business College:	
Business College, Jacksonville	Highest commendation
Mechanical Drawing:	
Triebel & Son, Peoria	Highest commendation
General Display of Penmanship:	
Business College, Jacksonville	Highest commendation

LOT 104—WAX, FEATHER, HAIR WORK, ETC.

Preserved Natural Flowers:	
Mrs. H. H. Cole, Peoria	Highest commendation

CLASS K—TEXTILE FABRICS.

E. H. BISHOP, *Superintendent.*

LOT 107—HAND SEWING, ETC.

Display of Laundry Work	
S. A. Fuller, Peoria	Highest commendation
Child's Dress:	
Helen A. Young, Monmouth	Highest commendation

LOT 109—FANCY WORK.

Fancy Knitting	
Mrs. C. Hinsey, Pekin	High commendation
Fancy Knitted Hood	
Mrs. Mary A. Fox, Farmington	Highest commendation

CLASS L—NATURAL HISTORY.

JOHN P. REYNOLDS, *Superintendent.*

LOT 112—TAXIDERMY, MINERALOGY AND CONCHOLOGY.

Curiosities from any one county:	
R. H. Spader, Atlanta	Highest commendation
Gems of Illinois:	
R. H. Spader, Atlanta	Highest commendation

CLASS N—EDUCATION.

EMERY COBB, *Superintendent.*

LOT 118—HIGH SCHOOL EXHIBIT.

Bookkeeping:
Warsaw High School, Warsaw .... Diploma

CLASS H—LOT 98.

A new Grape from T. S. Hubbard, Fredonia, N. Y., named "Prentiss," the committee regard as very promising, a white grape, berries of medium size, of a pure, sweet flavor, and evidently a good keeper; bunches compact, of medium size .... High commendation

REPORT OF LIBRARY COMMITTEE.

To the State Board of Agriculture

The following is the list of books received at the Department during the past year.

The library has been frequented daily by parties interested in the perusal of the books and publications on file.

The unexpended funds appropriated for the library will be needed to purchase needed books of reference and scientific works relating to agriculture.

Respectfully submitted,

H. D. EMERY,
GEO. S. HASKELL,
S. D. FISHER.

LIST OF BOOKS

HERD BOOKS.

No.	Title of Work.	Author.
1317	American Devon Record Vol. 1. (Presented by the Author.)	
1318	American Shorthorn Record. Vol. 3	
1319	American Jersey Cattle Club Herd Book. Vol. 7	
1320	American Berkshire Record. Vol 4	
1321	American Cotswold Record. Vol 1	
1322	Breeders' Trotting Stud Book. Vol. 1.	
1323	Coates' Herd Book Shorthorn Cattle. Vol. 26	Sanders
1324	Clydesdale Stud Book. Vol. 3	
1325	General Stud Book. Vol. 14	
1326	Holstein Herd Book. Vol. 4	
1327	Herd Book Hereford Cattle. Vol 11	
1328	Herd Register American Jersey Cattle Club. Vol. 7	
1329	Jersey Herd Book. Vol 4	
1330	Ohio Poland-China Record	
1331	Percheron-Norman Stud Book. Revised edition	
1332	Register of the Vermont Merino Sheep Breeders' Association. Vol. 1	

List of Books—Continued.

REPORTS, ETC.

No.	Title of Work.
	Connecticut.
1333	Report of Board of Agriculture and Experiment Station. 1880
	Georgia.
1334	Report Department of Agriculture. Vol. 6—1880
	Illinois.
1335	13th Annual Report Insurance, 1881
1336	House Journal, 1880
1337	Rand, McNally & Co. Business Atlas for 1881
1338	Report of the R. R. and W. Commissioners, 1880
1339	State Laboratory of Natural History (Bulletin No. 3)
	Indiana.
1340	Report of Board of Agriculture, 1880
1341	2d Annual Report Bureau of Statistics and Geology, 1880
	Iowa.
1342	Report of State Board of Agriculture, 1880
	Kansas.
1343	Sheep Husbandry, quarter ending 31st Dec., 1879
1344	Quarterly Report of the Board of Agriculture, 1880
	Kentucky
1345	Report on Agriculture, Etc., 1881
	Massachusetts.
1346	Trans. Horticultural Society 1879 Part 2
1347-48	Trans. Horticultural Society, 1880 Vols 1 and 2
1349-50	History of the Horticultural Society, 1829-1878
1351	Agricultural Report for 1880
1352	Trans. Massachusetts Society, 1881. Part 1
1353	Anniversary Memoirs of the Boston Society of Natural History, 1830-1880.
	Michigan.
1354	Report of Board of Agriculture for 1879
1355	Report of Pomological Society, 1880
1356	Report of Board of Agriculture, 1880
1357-58	Farm Statistics, 1879, 1880
	Missouri.
1359	General Index and Supplement on the Insects of Missouri (Bulletin No. 6)
	Maine.
1360	Report of Maine Board of Agriculture, 1880
	Minnesota.
1361	Statistics of Minnesota, 1880, by Christensen

List of Books—Continued.

No.	Title of Work.
	Nebraska
1362	Reports of Experiments at College Farm, Lincoln, 1880
	New York.
1363-64	Report Produce Exchange, 1878-1879
	Tennessee.
1365	Reports on Grasses, Meadows, Pastures and Sorghum. By Comm'r of Agriculture.
	Virginia.
1366	Fourth Annual Report Commissioner of Agriculture
	Foreign.
1367	Statistics of the Colony of Tasmania, 1880
1368	Catalogue of the Exhibits Tasmanian Court, 1880
1369	Sixth Report Montreal Horticultural Society and Fruit Growers' Association, 1880.
1370-1	Journal of the Royal Agricultural Society (2d series). Vols. 15 and 16
1372	Paris Universal Exposition, 1878 Rept. Agrl Implements By Knight, Comr., 1880..
1373-7	Paris Universal Exposition, 1878. Rept. of U. S. Comrs. In 5 vols. Donated by Samuel Dysart
1378	Fifth Report of the Montreal Horticultural Society, 1879
	Washington, D. C.
1379	Circular of Information Bureau of Education. No. 6
1380	Qr. Rept Chief Bureau Statistics Treasury Dept, 1881. No. 3
1381	Rept. Consuls of the United States Commerce, M'f'g, etc. No. 8. June, 1881
1382	Rept Commissioners of Education, 1879
1383	Qr Rept. Bureau of Statistics Treasury Dept. U. S., 1880-1881
1384-7	Contributions to the Natural History of the U. S Vols. 1, 2, 3, 4. By L. Agassiz...
1388	United States Executive Department. By Elmes
1389	Culture of the Sugar Beet, U S. Dept. of Agrl. Special Rept. No. 28
1390	Commerce and Navigation of the U. S, 1880 Foreign Commerce etc
1391	Dept of the Interior, 2d Report for 1878-1879 on the Rocky Mountain Locust
1392	Bureau of Education No 3 For 1881
1393	Cotton Goods Trade of the World. No. 12. October, 1881
1394	Annual Rept. Chief Bureau Statistics on Foreign Commerce U. S., 1880
1395	Consulars' Districts No 2 1880
1396	Reports on Commerce, Manufactures, etc. No. 2. 1880
1397	Report of the Commissioners of Education, 1878
1398	Circular of Information Bureau of Education
1399	Reports of Consuls of U. S on Commerce, Manufactures, etc., 1881
1400	Progress of Western Education in China and Siam
1401	Bureau of Education—"Legal Rights of Children." No. 3. 1880
1402	" " " " " No. 2. 1880

Miscellaneous.

No.	Title of Work.	Author.
1403-4	Dickson's Agricultural. Vols. 1 and 2. Donated by Wm. T. Talbott ...	
1405	Power of Movement in Plants	Darwin
1406	Compendium of Facts and Events	E. Emery.
1407	Memoirs of William Remick	
1408	Every Horse Owners' Cyclopedia	
1409	Encyclopedia of Agriculture	Loudin

The following is a list of periodicals received at the office during the year:

Name of Paper.	Location.	Publisher.
Prairie Farmer	Chicago	Prairie Farmer Co
Western Rural	"	Milton George
Country Gentleman	Albany, N. Y.	Luther Tucker & Son
Pantagraph	Bloomington	W. O. Davis
Gazette	Jonesboro	T. F. Bouton
National Live Stock Journal	Chicago	Stock Journal Co
Turf, Field and Farm	New York City	Turf, Field and Farm Ass'n
Coleman's Rural World	St. Louis, Mo	N. J Coleman
Home and Farm	Louisville, Ky	B. F Avery & Son
Argus	Atlanta	Geo. L. Shoals,
Kentucky Live Stock Record	Lexington, Ky	B. J. Bruce.
Journal	Albion	Morris Emmerson
Farmers' Review	Chicago	Farmers' Review Co
United States Miller	Milwaukee, Wis	E. H. Cawker
Observer	Carbondale	A. Ackerman
Daily State Journal	Springfield	Journal Co
Daily State Register	"	Register Co
Daily morning Monitor	"	T. W. S. Kidd
Daily Evening Post	"	Yokam & Rokker
Indiana Farmer	Indianapolis, Ind	Indiana Farmer Co
American Agriculturist	New York City	Orange Judd Co
California Farmer	San Francisco, Cal	Warren & Co
American Engineer	Chicago	Merrick Cowles
Farmer and Fruit Grower	Anna	H. C. Bouton
Weekly Drovers' Journal	Chicago	H. L. Goodall & Co
[illegible]	[illegible]	[illegible]
Engineer and Mining Journal	New York City	Scientific Publishing Co
Legal Adviser	Chicago	Legal Adviser Co
Republican	Whitehall	Pearce & Clapp
Gazette	Lanark	Frank F Livermore
Gardners' Chronicle	London, Eng	Wm. Richards
Mark Lane Express	"	Hazell, Watson & Viney
Entomologist	"	John Van Voorst
Entomologist 2d	"	Simpkin, Marshall & Co
Live Stock Journal	"	Edward J. Knight
Country Gentlemen's Magazine	"	Wm. Blackwood & Sons
Floral Magazine	"	L Reek & Co
The Gardener	"	Thos. Spanswick
Field, Farm and Garden	"	Horace Cox
North British Agriculturist	Edinburg, Scotland	Chas Anderson, Jr
Journal of Commerce	Chicago	Wm Baker
Freeport Journal	Freeport	Journal Printing Co
Industrial World	Chicago	Com. Advertiser Co
Drainage and Farm Journal	Indianapolis, Ind	J. J. W Billingsley & Son
Western Agriculturist	Quincy	T. Butterworth

The Auditing Committee and Committee on Agricultural and Industrial Education asked for further time to complete reports. Which was granted.

Reports of Superintendents of the various departments of the Fair were received and adopted, as follows:

CLASS A—CATTLE.

REPORT OF W. M. SMITH, *Superintendent.*

To the State Board of Agriculture:

The exhibit of cattle at the Twenty-Ninth Annual State Fair, in number and quality exceeds that of any former year.

The number of exhibiters from the several States are as follows Illinois, 22; Ohio, 4; Connecticut, 1; New York, 3; total, 26.

The entries of cattle of the several breeds were as follows; Shorthorns, 58, Herefords, 53; Devons, 60; Polled Angus, 34; Holsteins, 36; Jerseys, 109, Ayrshires, 93; Herds, 29; total, 472 entries.

It will be seen that forty-six per cent. of the cattle entries are of the beef breeds and fifty-four per cent. of the milk breeds.

In the beef breeds, twenty-nine per cent. of the entries were Shorthorns, twenty-eight per cent. Devons, twenty-six per cent. Herefords, and seventeen per cent. Polled Angus.

In the milk breeds, forty-seven per cent. of the entries were Jerseys, thirty-eight per cent. Ayrshires, and fifteen per cent. Holsteins.

The large prizes offered for herds doubtless had some effect in increasing the exhibit, but the awards were not considered by the friends of the unsuccessful and rival breeds as deciding the question of their relative value for the most profitable production of the best quality of beef or daily products.

The feeling among breeders of beef cattle is increasing to the effect that the exhibiter of highly fed breeding stock is attended with much danger and risk, and, until the practice of showing stock that is too fat for breeding purposes is corrected, the majority of our most practical and successful breeders will not attend the Fair with stock.

The large majority of the visitors at our annual Fairs would be as much interested in seeing a well fatted steer as a fat breeding bull, and the merits of the several beef breeds cannot be better demonstrated than by providing three rings for fat steers, where all the breeds, crosses or grades could be exhibited together at the State Fair.

It is believed that the proposed rings for fat cattle would not only prove a great attraction, but would largely increase the interest in the production of a better class of beef cattle with the large number of farmers in attendance each year at the Fair that do not attend the Fat Stock Show.

Prominent breeders have heretofore requested the privilege of showing fat steers at the State Fair, and, on various occasions, have exhibited steers which attracted general attention.

The number of breeders of pure bred cattle of the several beef breeds is small, compared with the large number of feeders of the best class of export cattle who might thus be induced to take an active interest in the State Fair, as exhibiters and visitors.

The offering of liberal prizes for one, two and three-year old steers, or spayed heifers, at the State Fair, would, it is believed, largely increase the interest in, and insure a much larger show of superior animals at the Fat Stock Show.

If County Agricultural Boards could be more generally induced to offer premiums for fat steers to be exhibited at County Fairs, it would encourage a larger number of our most enterprising feeders to breed, or purchase for feeding, a better class of cattle, and thus largely increase the demand for superior well bred bulls for breeding purposes.

The following table gives the number of entries of cattle, and premiums offered the various breeds at the Illinois State Fair since and including 1858.

The entries, premiums offered and paid in the cattle class at the late Fair are given herewith, as well as the list of exhibiters in this class.

Respectfully submitted,

W. M. SMITH, Supt. Class A.

Exhibiters of Cattle.

Name.	Postoffice.	Breed.
	ILLINOIS.	
Anderson & Findlay	Lake Forest	Polled Angus
Allen, J. B	Delavan	Jersey
Barber, V	Decatur	Jersey
Cox, J., & Son	Wyoming	Shorthorn
Culbertson, C. M	Chicago	Hereford.
Clark, Thomas	Beecher	Hereford.
Constable, Wm	"	Hereford.
Combs, Wm. N	Fairbury.	Jersey
Jones, N. N	Normal.	Jersey
King, Chas. P	Peoria	Jersey
Merna, Geo	Wyoming	Jersey
May, W. A	Pekin.	Ayrshire.
Potts, J. H., & Son	Jacksonville.	Shorthorn
Pratt W. A	Elgin	Holstein.
Ryburn, D. G	Randolph	Shorthorn
Ross, L. F	Avon	Polled Angus and Devon.
Sandusky, H	Indianola.	Shorthorn
Stephenson, Wm., & Son	Little Indian	Shorthorn
Tripp, D. H. & S. S	Peoria	Jersey
Vance, I. W	Cantrall.	Jersey
Younger, Wm	Fairbury.	Devons.
	OHIO.	
Gardner, W. L	Norwalk	Jersey and Holstein
Hoover & Co.	Columbus	Jersey
Whitmore, D. J	Castletown.	Devons.
Willson, A. J	Grafton.	Ayrshire.

Exhibiters of Cattle—Continued.

Name.	Postoffice.	Breed.
	CONNECTICUT.	
King, O. B	Watertown	Devon
	NEW YORK.	
Converse, J. T	Woodville	Ayrshires
Redfield, Frank B	Batavia	Polled Angus
Unadilla Stock Association	West Edmeston	Holstein

Entries, Offerings and Awards, Fair, 1881.

Lot	Breed, etc.	Number of Entries.						Total number entries	Amount premiums offered	Amount premiums paid
		4 years old or over	3 years old or over	3 years old and under 4	2 years old and under 3	1 year old and under 2	Under 1 year old			
1	Shorthorn bulls	....	3	...	3	2	4	12	$135	$135
1	Shorthorn cows and heifers	8	...	4	5	5	4	26	175	175
2	Shorthorn herd—bull 1 cow and 3 heifers	....	...	....	....	...	...	2	50	50
3	Shorthorn sweepstakes—bulls	....	....	....	...	....	...	6	50	50
3	Shorthorn sweepstakes—females	..	....	....	....	....	....	12	50	50
	Total	8	3	4	8	7	8	58	$460	$460
4	Hereford bulls	...	2	...	3	....	6	11	135	105
4	Hereford cows and heifers	8	....	5	5	4	2	24	175	175
5	Hereford herd—bull, 1 cow and 3 heifers	...	....	....	...	....	....	3	50	50
6	Hereford sweepstakes—bulls	....	....		....	....	....	4	50	50
6	Hereford sweepstakes—females	....	....	....	....	....	...	11	50	50
	Total	8	2	5	8	4	8	53	$460	$430
7	Devon bulls	....	3	...	.	2	8	13	135	95
7	Devon cows and heifers	10	....	3	4	6	5	28	175	175
8	Devon herd—bull, 1 cow and 3 heifers	....	....	....	...	....	....	3	50	50
9	Devon sweepstakes—bulls	..	....	....	....	...	...	7	60	50
9	Devon sweepstakes—females	....	....	....	....	....	....	9	50	50
	Total	10	3	3	4	8	13	60	$460	$420
10	Polled Angus bulls	....	1	....	....	2	2	5	135	80
10	Polled Angus cows and heifers	3	...	2	3	5	4	17	175	175
11	Polled Angus herd—bull, 1 cow and 3 heifers	....	....	....	...	....	....	1	50	50
12	Polled Angus sweepstakes—bulls	....	...	...	....	....	....	4	50	50
12	Polled Angus—females	...	...	....	...	....	....	7	50	50
	Total	3	1	2	3	7	6	34	$460	$405
13	Holstein bulls	....	3	....	1	....	1	5	135	80
13	Holstein cows and heifers	5	....	2	5	3	1	16	175	165
14	Holstein herd—bull, 1 cow and 3 heifers	....	....	....	....	....	....	1	50	50
15	Holstein sweepstakes—bulls	....	....	....	....	....	....	6	50	50
15	Holstein sweepstakes—females	....	....	....	....	....	....	8	50	50
	Total	5	3	2	6	3	2	36	$460	$395
16	Jersey bulls	....	6	...	1	4	12	23	135	120
16	Jersey cows and heifers	17	...	10	7	14	11	59	175	175
17	Jersey herd—bull, 1 cow and 3 heifers	....	....	....	....	....	....	4	50	50
18	Jersey sweepstakes—bulls	....	....	....	....	....	....	10	50	50
18	Jersey sweepstakes—females	....	....	....	...	....	....	13	50	50
	Total	17	6	10	8	18	23	109	$460	$445

Entries, Offerings and Awards—Continued.

Lot	Breed, etc.	Number of Entries.						Total number entries	Amount premiums offered	Amount premiums paid
		4 years old or over	3 years old or over	3 years old and under 4	2 years old and under 3	1 year old and under 2	Under 1 year old			
19	Ayrshire bulls	....	5	....	4	2	7	18	$135	$135
19	Ayrshire cows and heifers	16	....	5	4	14	7	46	175	175
20	Ayrshire herd—bull, 1 cow and 3 heifers	....	....	....	...	....	....	4	50	50
21	Ayrshire sweepstakes—bulls	....	....	....	....	....	....	6	50	50
31	Ayrshire sweepstakes—females	...	....	....	....	....	....	19	50	50
	Total	16	5	5	8	16	14	93	$460	$460
22	Beef breeds, sweepstakes, herd—bull and 4 cows or heifers	..	....	....	....	...	....	12	500	500
23	Milk breeds, sweepstakes, herd—bull and 4 cows or heifers	....	...	....	...	...	....	17	500	500
	Grand total	67	23	31	45	63	74	472	$4,220	$4,015

ENTRIES AND OFFERINGS ILLINOIS FAIRS, 18 3-1881.

Year.	Location of Fair	BEEF BREEDS.								MILK BREEDS.						GRADES AND CROSSES—Herds, Etc.		Total amount premiums offered........ ....
		Shorthorn.		Hereford.		Devon.		Poll'd Angus		Holstein.		Ayrshire.		Jersey.				
		No entries	Am'nt premiums offered	No. entries .	Am'nt premiums offered	No. entries	Am'nt premiums offered	No. entries .	Am'nt premiums offered	No. entries .	Am'nt premiums offered	No. entries	Am'nt premiums offered	No. entries ..	Am'nt premiums offered	No. entries .	Am'nt premiums offered	
1853	Springfield	72	$150															$43
1854	Springfield		160															
1855	Chicago		260				200											
1856	Alton					3												1,150
1857	Peoria		625		625		625						$625				$540	3,040
1858	Centralia		600				600										884	2,084
1859	Freeport		575		475		575						300				399	2,324
1860	Jacksonville	127	655				655										555	1,865
1861	Chicago	149	660		50		660						50		$50		700	2,170
1862	Peoria	149	440		30		440						30		30		530	1,500
1863	Decatur		300		30		300						30		30		545	1,235
1864	Decatur		400				400										585	1,385
1865	Chicago	144	400				400										660	1,460
1866	Chicago		400				280						100		100		580	1,460
1867	Quincy		400				400										905	1,705
1868	Quincy	100	400			22	400					5	300			64	910	2,010
1869	Decatur		448				400										1,175	2,023
1870	Decatur	138	500			28	400					14	150	23	150	110	1,120	2,320
1871	Duquoin	108	500	15	500	15	400					20	150	20	150	80	1,125	2,825
1872	Ottawa	174	500	17	500	19	400					16	300	21	300	130	1,110	3,110
1873	Peoria	133	510	18	455		400					22	300	14	300	116	1,205	3,170
1874	Peoria	135	500	20	500	11	500			27	250	28	500	27	250	39	1,155	3,655
1875	Ottawa	112	720	25	350		350			17	250	6	350	15	250	36	1,105	3,375
1876	Ottawa	95	500	23	350	8	350			19	350	3	350	33	350	64	1,005	3,255
1877	Freeport	100	430	63	430	69	436			65	430	51	430	110	430	117	1,015	3,595
1878	Freeport	111	450	47	450	33	450			57	450	53	450	63	450	68	825	3,525
1879	Springfield	49	450	44	450	39	450			69	450	118	450	215	450	82	795	3,495
1880	Springfield	39	510	43	510	47	510	16	510	44	510	68	510	57	510			3,570
1881	Peoria	58	460	53	460	60	460	34	460	36	460	93	460	109	460	29	1,000	4,220

CLASS B—HORSES.

REPORT D. E. BEATY, *Superintendent.*

To the State Board of Agriculture

The show of horses at the Fair of 1881 was very satisfactory, it being one of the finest exhibitions ever made in the State, both as regards numbers and quality.

The trotting horse has assumed so distinct a type of late years, and is bred so largely for track purposes, that, in the opinion of your Superintendent, the time has arrived when the lot heretofore provided in the premium list for roadster horses should hereafter be set apart for horses generally exhibited in this lot of late years and commonly designated as the trotting horse.

The trotting horse is of American origin and has been improved so wonderfully in speed and endurance as to be a matter of surprise to our people and astonishment to horsemen of other countries.

The large and increasing number of breeders of this class of horses are deserving of proper recognition and encouragement at the hands of this Board, which has for many years provided a separate lot for the running horse, the arguments for which will apply with equal force to the change recommended in the heading of the lot heretofore provided for roadster horses, making it especially for trotting horses.

This distinct type of trotting horse has of late years been crowding what is known as the roadster horse into the ring for gentlemen's driving horses, where the more showy and attractive horses of considerable speed and endurance, not especially adapted for the race track, should be shown.

The attention of the Board is called to the published requirements in the premium list at the head of the lots for roadster and gentlemen's driving horses, which are practically identical, each specifying style speed and action as the essential matters to be considered by committee in making awards.

There being no well defined difference in the tests applied by the Board to the horses entered in these rings, exhibiters have experienced some difficulty in deciding in which ring to enter their stock—the question generally being decided, by the owner of track horses, to compete in the roadster class, while the owners of well gaited and attractive roadster horses prefer to take their chances in the ring for gentlemen's driving horses.

In case the Board deem it wise to make the change suggested it is recommended that the same amount be set apart to the lot for gentlemen's driving horses as is now given to the other classes of horses, and that rings for the several ages be provided, the same as in lots for other distinct types of horses.

SPEED RINGS.

The exhibition of trotting and running horses at the late Fair was not entirely satisfactory, either in the number of horses or their performance.

The horses of speed and reputation were the exception, and the limited number of entries for the several races is unmistakable evidence that inducements were not offered to attract a sufficient number of horses calculated to reflect credit upon the Illinois State Fair

While the Board had for its object, in offering premiums in the speed department, the encouragement of the breeding of running and trotting horses, noted for speed and endurance, the matter of providing an attraction to increase the gate receipts was one of the considerations that influenced the Board in offering inducements for such tests

The exhibiters, and class of horses shown at the late Fair, are as follows

Name	Postoffice.	Class.
	ILLINOIS.	
Armstrong, Andrew	Beason.	Hambletonian
Ashlock, Wm E	Carrollton	Roadsters
Ayers, Joseph	Bloomington	Carriage team
Augustine, E F	Cooper	"
Augustine & Cooper	"	Gent's driving team
Buckles, Wiley	Champaign.	Thoroughbred
Brady, Wm	Peoria.	"
Babcock, Wm., & Son	Canton	Roadsters
Birkey Bros	Morton	French draft
Baker, R H	Heyworth	Draft
Busey, J. S	Champaign.	Clydesdale
Birkey, Amos	Morton	Agricultural purposes
Bridenthal, J. W	Lenox	" "

Exhibiters of Horses—Continued.

Name.	Postoffice.	Class.
Bright, R. G	Normal.	Saddle horses
Burnsides, Samuel	Milo	Carriage team
Brown, C	Oak Grove	Gents' driving
Conover & Crum	Little Indian	Thoroughbred.
Crowley & Schenck	Peoria.	Roadsters.
Caton Stock Farm	Joliet	"
Culp, C H	Jacksonville.	"
Cress, Wm	Washington	Boys' riding
Cress, Peyton M	"	English draft
Cline, J. O	Cantrall	Agricultural purposes
Courter, E. L	Ottawa	" "
Clayton, J. R	Wyoming	" "
Chatterton, Geo. W., Jr	Springfield	Saddle horses
Colwell, Henry	Duncan.	Carriage team
Corbett, J G	Princeville.	Gents' driving team
Coolidge, Ed. S	Brimfield.	Mules.
Craig, John	Farmington.	"
Cress, Wm	Washington	"
Dowdall, W. T	Peoria.	Boys' riding
Donlevy, Peter	Ottawa.	Roadsters
Degen, I. & J	"	French draft
Dorsey, P. H	Bunker Hill	Roadster.
Dixon, Thos. L	Farmington	"
Dillon, E. & Co	Bloomington	Normans.
Dixon, Simon	Wyoming	Saddle horses
Dunlap, George	Bloomington	" "
Darnell, J O	Elmwood	Gents' driving
Dorance, H. B	Wyoming	" " team
Ellis, Stephen	Canton	" " "
Foulk, John	Mendota.	Roadster.
Fuller, A	Ottawa	"
Fuller, E. D	Tremont	French draft
Fry, Thomas	Kickapoo	Agricultural purposes
Graff, William	Ashland	Thoroughbred
Gore, H. W, & Co	Washington	Clydesdale.
Gillett, I. B	Tivoli.	Roadster.
Ham, Wm. D	Hennepin	"
Hays, H. C	Lexington	"
Ham, Wm. D	Hennepin	"
Harter, Josiah	Canton	"
Hull, Wm	Clear Creek	"
Higby, M	Canton	"
Handford, J	Tivoli.	"
Hall, James	Bradford	French draft
Hodson, Ed.	El Paso	Clydesdale.
Holloway, Robert	Alexis	"
Hallem, John	Elliott.	English draft
Huggins, C. H	Gilson.	Agricultural purposes
Hanna, Geo. S	Bloomington	Roadsters
Homes, James	Toulon	Carriage team
Hodson, L. E	El Paso	Boys' riding
Johnson, C. E	Alta	Roadsters
Johnson, Emory	Canton	"
Jack, E. M	Peoria	Gents' driving
Kemple, J	Bardolph.	Agricultural purposes
Leeper, J. N	Farmington	" "
McKean, James	Bradford.	Roadsters
McQuaid, J P	Canton	"
McQuaid, Craig	"	Boys' riding
McMullen, Robert	Farmington.	"
McMillon, John	Clinton	Roadsters
Melbourne Stock Farm	Washington	Clydesdale.
Miller, John W	Clinton.	Roadster.
Meyer, Jacob	Mt. Pulaski	"
Miller, J. L	Canton.	"
Maple, A. G	Mapleton.	English draft
Merritt, John L	Kappa.	Agricultural purposes
May, Thomas	Lewiston	" "
Negley, Benj	Farmington	Mules
Phillips, H. T	Glassford.	Roadsters
Rupert, L. S., & Co	Washington.	"
Rigsby, J. S	Bunker Hill	"
Richardson, Geo	Brimfield.	"
Rowley, T. N	Canton	"
Roberts, J. S	Franklin	"
Ross, W. H	Bloomington	French draft
Robinson, H	Fairbury	"

Exhibiters of Horses—Continued.

Name.	Postoffice.	Class.
Richmond, J. A	Mackinaw	Agricultural purposes
Rice, Tilford	Lenox	Mules
Sharick, John	Metamora	Roadsters
Scribner, S	Groveland	"
Selby, James	Peoria	"
Studer, A M	Peoria	"
Scales, Y. D	Roodhouse	"
Stickrod, R H	Champaign	"
Stubblefield, G. W., & Co	Bloomington	French draft
Smith, T. N	Fairbury	Agricultural purposes
Sheldon, S. S	Ottawa	" "
Sturns, A. J	Bradford	" "
Smith, F	French Grove	Saddle horses
Scott, Geo. E	Wyoming	" "
Shepherd, H. C	Lovington	Gents' driving
Stevenson, Wm., & Son	Little Indian	Saddle horses
Spear, Alfred	Peoria	Boys' riding
Turner, Andrew	Atlanta	Agricultural purposes
Trimmer, E. A	Wyoming	Carriage team
Trout, J. H.	Tremont	Saddle horses
Vance & Oliver	Virginia	Roadsters
Van Meter & Pratt	Atlanta	"
Voris, Richard R	Peoria	"
Virgin, John	Fairbury.	Norman
Watts, A. B	Farmingdale	Thoroughbred
Whitten, Bros	Wilmington	"
Wood, Ellis	VanOrm	Roadsters
White, Daniel	Tivoli	"
Wasson, Jos	Peoria	"
Wormley, E. K	Mendota	"
Worden, J. J	Swan Creek	Clydesdale
Wilbray, F. S.	Tremont	English draft
White, James H	Peoria	Draft team
Yerion, Geo. A	Kappa	Roadster
Zell, Geo. H	Peoria	"
	CANADA	
Fisher, J. P. & V	Gooderich	Clydesdale

The following table gives the number of entries, the amount of premiums offered and paid in this class at the late Fair·

Lot	Breed, etc.	4 years old or over	3 years old and under 4	2 years old and under 3	1 year old and under 2	Under 1 year old	Brood mare with 2 colts	Stallion with 5 sucking foals	Total number entries	Amount premiums offered.	Amount premiums paid
24	Thoroughbred stallions	4	1	..	..	3	....	1	9	$200	$135
24	Thoroughbred mares	4	1	2	3	2	2	....	14	180	170
25	Thoroughbred sweepstakes—stallions	....	...	...	...	...	....	....	6	100	100
25	Thoroughbred sweepstakes—mares	...	...	..	...	...	...	...	9	50	50
	Total	8	2	2	3	5	2	1	38	$530	$455
26	Roadster stallions	22	6	10	9	16	..	4	67	200	200
26	Roadster mares	14	8	2	5	9	9	....	47	180	180
27	Roadster sweepstakes—stallions	....	....	....	....	....	....	....	28	100	100
27	Roadster sweepstakes—mares	...	....	....	...	...	...	...	17	50	50
	Total	36	14	12	14	25	9	4	159	$530	$530
28	French draft stallions	11	8	4	2	..	....	1	26	200	175
28	French draft mares	3	2	2	1	1	..	....	9	180	130
29	French draft sweepstakes—stallions	....	....	...	...	...	....	...	22	100	100
29	French draft sweepstakes—mares	...	...	..	..	...	....	..	11	50	50
	Total	14	10	6	3	1	...	1	68	$530	$455

Number of Entries, Premiums Offered, etc.—Continued.

Lot	Breed, etc.	4 years old or over	3 years old and under 4	2 years old and under 3	1 year old and under 2	Under 1 year old	Brood mare with 2 colts	Stallion with 5 sucking colts	Total number entries	Amount premiums offered	Amount premiums paid
30	English draft stallions	10	6	7	6	1	...	...	30	$200	$140
30	English draft mares	5	4	4	2	...	1	..	16	180	155
31	English draft sweepstakes—stallions	...	...	...	...	...	...	...	24	100	100
31	English draft sweepstakes—mares	...	...	...	...	...	...	...	13	50	50
	Total	15	10	11	8	1	1	...	83	$530	$445
32	Draft team	...	...	...	...	...	...	...	6	60	60
33	Horses for agricultural purposes—stallions	20	5	15	8	11	...	...	59	200	150
33	Horses for agricultural purposes—mares	12	7	7	3	6	5	...	40	180	180
34	Horses for agricultural purposes—sweepstakes—stallions	...	...	...	...	...	...	...	47	100	100
34	Horses for agricultural purposes—sweepstakes—mares	...	...	...	...	...	..	...	24	50	50
	Total	32	12	22	11	17	5	...	170	$530	$480
35	Saddle stallions	...	...	...	...	...	...	...	4	60	50
35	Saddle mares	...	...	...	...	...	...	...	4	60	50
35	Saddle geldings	...	...	...	...	...	..	...	7	60	50
	Total	...	...	...	...	...	...	...	15	$180	$150
36	Carriage team	...	...	..	...	...	...	...	7	60	60
36	Family mare or gelding	...	..	...	...	...	...	...	8	30	30
	Total	...	...	...	...	...	...	...	15	$90	$90
	Gentlemen's driving horses—										
37	Pair of mares	...	...	...	..	...	...	...	9	60	60
37	Pair of geldings	...	..	...	...	...	...	...	4	60	60
37	Single stallion	...	...	...	..	...	...	...	12	60	60
37	Single mare	...	...	...	..	...	..	..	14	45	45
37	Single gelding	...	...	..	...	...	...	...	11	45	45
	Total	..	..	...	...	...	...	...	50	$270	$270
38	Jacks	2	.	...	...	...	...	..	2	155	40
38	Jennets	...	...	...	...	...	...	...	...	115	...
38	Mules	...	6	...	1	4	...	...	11	90	55
39	Sweepstakes—jack with 3 mules	...	...	...	...	..	...	...	1	50	50
39	Sweepstakes—jennet with 2 colts	. .	...	...	...	...	...	..	...	25	......
39	Sweepstakes—mule team 3 y'rs old or over	...	...	...	...	...	...	...	3	40	40
	Total	2	6	...	1	4	...	...	17	$475	$185
40	Equestrianism—boys' riding	...	...	...	...	...	...	...	7	21	21
	Grand total	107	54	53	40	53	17	6	628	$3,746	$3,141

Respectfully submitted.

DAVID E. BEATY,
Superintendent Class B, Horses.

CLASS C—SHEEP.

REPORT OF E B. DAVID, *Superintendent.*

To the State Board of Agriculture:

In compliance with my duty as Superintendent of the Sheep Department, I have the honor to report

The sheep in the pens at the State Fair of 1881 numbered—

Long Wools	181
Middle Wools	95
Fine Wools	150
Total	426

The effect of the rule requiring stock to be in the pens by 9 o'clock Tuesday morning, was to secure the more prompt presence of exhibiters with their animals than has heretofore been evident.

The high reputation of the sheep displays of the Illinois State Fair, found no exception in the aggregate of the display at Peoria in 1881, though a few animals of mediocre merit were in the pens

It early became evident that the panel of committeemen designated by the Board could not be depended upon for discharging the duties of placing the premiums at the time designated in the printed programme.

As soon as substitutes f r absentees could be secured, animals were called out for examination, as nearly in the required order as was possible under the circumstances This labor of filling committees needed to be repeated with every lot, as not a working majority of either one of the thirteen committees on sheep was present for duty

The annoying delay to exhibiters, many of whom had arranged in good faith to meet the published requirements of the programme while duty or pleasure called them elsewhere at other hours with the increase of labor and responsibility of the Superintendent of the Department, stand as strong arguments for some improvements upon the mode of obtaining awarding committees adhered to by the Board, and when to these is added the uncertainty of securing first class judges of sheep, under conditions at once limiting the time and restricting the opportunities necessary to a proper choice, it seems that no room is left for controversy upon the propriety of some radical change. A compliance with the request of the State Wool Growers Association, for a change in the mode of judging sheep, and the employment of one "expert" judge in lieu of the number now required for placing awards, suggests a remedy for so many of the inconveniences that attach to the custom heretofore observed, that I heartly commend it to your favorable consideration.

A comparison of the list of committeemen appointed by the Board, and published in the premium list, with a list of those by whom awards were actually made, discloses the fact that 88 per cent. of the regular appointees failed to respond for the discharge of the duties imposed upon them.

The list of sixty-five regular appointees is to be credited with an attendance of but twelve, leaving fifty-three to be classed as not reporting for duty

This showing, coming as it does after so many years trial under conditions as favorable as can be expected to surround the Fairs of the future, seems to me to preclude the necessity of argument for some change—either in the direction indicated or such other as the wisdom of the Board may devise for relieving our sheep awards from the cloud that dims their lustre, by leaving it possible for other than the best animals to go abroad decked with the insignia of our highest approbation, and carrying from our treasury money to which their merit does not entitle them.

I feel it my duty to call your attention to the disparity in the number of animals entered on the books of the Board, and the number present and occupying pens.

By actual count there were in the pens 426 sheep, while the number of entries both in the limited rings and in Sweepstakes was 348, showing that 78 animals or over 18 per cent. of the entire number of sheep shown were not entitled to the 20 pens occupied by them and bedded at the expense of the Board. This surplus was made up of animals that were for sale, and which could thus be transported and housed upon the terms conceded to exhibited animals. The presence of these animals is not objectionable only in so far as they occupy space to the exclusion of stock for exhibition, and to the inconvenience of bona fide exhibiters That such a result follows their presence in a greater or less degree is quite evident to the careful observer.

A further comparison of the entry books with the show rings discloses the fact that more than one-fifth of the animals entered were not brought out for examination by awarding committees. Of the 348 animals represented by entries on the books as turned over to the Superintendent, and enjoying all the privileges extended by the Board, only 277, or about 80 per cent, were shown.

Briefly summed up, the record shows·

Number of sheep on ground	Breed.	Number entries.	Number shown.	Deficit.	Per cent. shown
181	Long Wool	137	105	32	77+
95	Middle Wool	93	71	22	76+
150	Fine Wool	118	101	17	85+
426	Total	348	277	71	79

In view of the fact that less than two-thirds of the animals in the pens were placed in competition before the awarding committees, some remedy seems necessary for the protection of the Board as well as for the convenience of those who in good faith, bring stock for competition for premiums. I suggest that a fee covering rent of pen and cost of bedding be charged for each animal, and that this be refunded on the last day of the Fair on such animals as have been brought before the awarding committees in the show ring

Such requirement would work no serious inconvenience to the bona fide exhibitors, and could not be deemed unreasonable by those who wish to use the facilities afforded by the State Fair, for making sales of such animals as are not exhibited.

I further recommend that the movement of committees in the sheep department be omitted from the published programme, and left to the discretion of the Superintendent to arrange their movements as in his judgment may seem best.

The argument that applies to stock shown in front of the amphitheatre has but little force here, as sheep are necessarily viewed by the public while in the pens, and when not under the eye of the awarding committee. With the change here suggested, and the prompt attendance of committeemen secured, awards could be placed during the earlier days of the Fair, allowing the majority of visitors the privilege of examining the premium animals, while having free access to all the pens.

The competition for premiums on fleeces, was by no means what is demanded by the importance of the wool-growing interest to our State, and the recognized merit of our best wool. But six fleeces were shown, viz

Long Wool, under two years old	one fleece
Middle Wool over two years old	one fleece
Fine Wool, over two years old	two fleeces
Fine Wool, under two years old	two fleeces

Among the more prominent causes of this unsatisfactory showing, may be enumerated. first, inadequate premiums—those offered being deemed insufficient compensation for selecting and preserving fleeces, and placing them on exhibition. second, the absence of facilities for display of fleeces when on the ground third, the uncertainty of having them passed upon by competent judges.

I recommend that at the State Fair of 1882 there be offered a cash premium of $10 for best five fleeces of each quality of wool enumerated in the list of last year, and there be prepared suitable conveniences for the safety and proper display of wools shown, all to be passed upon by some recognized expert, who will properly classify it, and mark it with the name by which it is known and quoted in the markets.

In conclusion, I desire to bear hearty testimony to the general courtesy and deportment of sheep exhibiters at the Fair of 1881. To the inconveniences inseparable from crowded pens and temporary buildings, were added the discomforts and disappointments of a two-days' rainstorm, through which the patience of all compelled to remain on the Fair Grounds was taxed to the extreme. Despite this condition of affairs, a general good humor and disposition to accommodate themselves to circumstances characterized the relations of exhibiters to each other, and those members of the Board with whom they were brought in business contact.

The following breeders exhibited sheep at the late Fair

Name.	Postoffice.	Class.
	ILLINOIS.	
Brownlee, M. C	Monmouth	Leicester or Lincoln Merino
Day, F. E	Streator	Merino
Graham, D. C	Cameron	Leicester or Lincoln
McFadden, G. W., & Bro	Atlanta	Merino
Morgan & Cotton	Camargo	Shropshiredown Cotswold
Perrine & Brownlee	Monmouth	Merino
Potts, J. H. & Son	Jacksonville	Southdowns
Strawn, Abner	Ottawa	Cotswolds
Taylor Bros	Waynesville	Shropshiredown Merino

Breeders of Sheep—Continued.

Name.	Postoffice.	Class.
	OHIO.	
Cooper. Maddux & Co	Reading	Oxfordowns
	KENTUCKY.	
Scott, W. L	Scott's Station	Leicester or Lincoln Cotsw'lds
	PENNSYLVANIA.	
Perrine, Robert	Patterson Mills	Merino
	MICHIGAN.	
Willson, Frank	Jackson	Cotswold
	CANADA.	
Sorby, H. & O	Guelph	Cotswolds, Southdowns

The following table gives in detail the number of entries, amount of premiums offered and paid, in the Sheep class, at the Fair of 1881:

Lot	Breed, etc.	NUMBER OF ENTRIES.			Total number entries	Amount premiums offered	Amount premiums paid
		2 years old or over	1 year old and under 2	Under 1 year old			
41	Cotswold rams	8	10	9	27	$70	$70
41	Cotswold ewes	11	20	8	39	70	70
42	Cotswold sweepstakes—rams	....	....	....	11	20	20
42	Cotswold sweepstakes—ewes	....	....	....	17	15	15
42	Cotswold sweepstakes—ram and 5 ewes	....	...	...	2	20	20
42	Cotswold sweepstakes—ram with 5 of his get	...	...	...	3	20	20
	Total	19	30	17	99	$215	$215
43	Leicester or Lincoln rams	2	4	4	10	70	70
43	Leicester or Lincoln ewes	4	5	3	12	70	70
44	Leicester or Lincoln sweepstakes—rams	....	....	....	6	20	20
44	Leicester or Lincoln sweepstakes—ewes	....	....	....	7	15	15
44	Leicester or Lincoln sweepstakes—ram and 5 ewes	.. .	....	....	2	20	20
44	Leicester or Lincoln sweepstakes—ram with 5 of his get	....	....	....	1	20	20
	Total	6	9	7	38	$215	$215
45	Southdown rams	4	3	3	10	70	65
45	Southdown ewes	4	5	2	11	70	70
46	Southdown sweepstakes—rams	....	....	....	4	20	20
46	Southdown sweepstakes—ewes	....	....	...	4	15	15
46	Southdown sweepstakes—ram and 5 ewes	....	...	...	1	20	20
46	Southdown Sweepstakes—ram with 5 of his get	....	...	...	2	20	20
	Total	8	8	5	32	$215	$210
47	Shropshiredown, etc., rams	6	6	6	18	70	70
47	Shropshiredown, etc., ewes	7	12	5	24	70	70
48	Shropshiredown, etc., sweepstakes—rams	....	...	....	7	20	20
48	Shropshiredown, etc., sweepstakes—ewes	....	....	...	9	15	15
48	Shropshiredown, etc., sweepstakes—ram and 5 ewes	....	.	....	2	20	20
48	Shropshiredown, etc , sweepstakes—ram with 5 of his get	...	....	...	1	20	20
	Total	13	18	11	61	$215	$215

Number of Entries, etc., of Sheep—Continued.

Lot	Breed, etc.	NUMBER OF ENTRIES. 2 years old or over	NUMBER OF ENTRIES. 1 year old and under 2	NUMBER OF ENTRIES. Under 1 year old	Total number entries	Amount premiums offered	Amount premiums paid
49	American Merino rams	9	8	7	24	$70	$70
49	American Merino ewes	15	11	10	36	70	70
50	American Merino sweepstakes—rams	...	...	...	13	20	20
50	American Merino sweepstakes—ewes	...	...	...	14	15	15
50	American Merino sweepstakes—ram and 5 ewes	...	...	...	4	20	20
50	American Merino sweepstakes—ram with 5 of his get	..	...	...	3	20	20
	Total	24	19	17	94	$215	$215
51	French Merino, etc., rams	2	2	2	6	70	55
51	French Merino, etc., ewes	3	4	2	9	70	60
52	French Merino, etc., sweepstakes—rams	...	...	...	4	20	20
52	French Merino, etc., sweepstakes—ewes	...	..	...	3	15	15
52	French Merino, etc., sweepstakes—ram with 5 ewes	...	..	...	1	20	20
52	French Merino, etc., sweepstakes—ram with 5 of his get	...	..	..	1	20	20
	Total	5	6	4	24	$215	$190
	Grand total	75	90	61	348	$1,290	$1,260

Fleeces.

Lot	Breed, etc.	Number of entries	SILVER MEDALS. No. offered	SILVER MEDALS. No. awarded
53	Long Wool—12 months' fleece from sheep over 2 years old	......	1	......
53	Long Wool—fleece from sheep under 2 years old	1	1	1
53	Middle Wool—12 months' fleece from sheep over 2 years old	1	1	1
53	Middle Wool—fleece from sheep under 2 years old	......	1	......
53	Fine Wool—12 months' fleece from sheep over 2 years old	2	1	1
53	Fine Wool—fleece from sheep under 2 years old	2	1	1
	Total	6	6	4

Respectfully submitted.

E. B. DAVID,
Superintendent Class C, Sheep.

CLASS D—SWINE.

REPORT DAVID GORE, *Superintendent.*

To the State Board of Agriculture:

The exhibit of Swine at the late Fair was large, and the quality of stock was in keeping with the progressive spirit characteristic of breeders of improved stock.

In number of entries, the Berkshire takes the lead with 141 entries; the other breeds were represented as follows

Poland Chinas	117 entries
Chester White	60 entries
Essex	57 entries
Small Yorkshire and Suffolks	52 entries
Other distinct breeds	2 entries

The departure from the usual custom of showing breeds separately, did not give satisfaction to the exhibiters of Yorkshire or Suffolk hogs, and it is recommended that each of the breeds have a separate lot as heretofore.

The large show at the late Fairs and the increasing popularity of the Yorkshire swine, when compared with the Suffolk, should, in the opinion of your Superintendent, entitle each of these distinct and recognized breeds to separate lots.

The following exhibiters were present:

Name.	Postoffice.	Class
	ILLINOIS.	
Aiman, A	Tolono	Poland China
Apgar, Carey F.	Peoria	"
Boston, J. W.	Jacksonville	Berkshire
Ball, Robert	Hennepin.	Essex
Cole, B. R.	Lovington	Poland China
Darnell, J. C.	Elmwood	Berkshire and Poland China
Dunlap, George	Bloomington	Berkshire
Dorsey, A. & J.	Perry	Chester White, Poland China and Berkshire
Letton, Caleb	Jacksonville	Berkshire
McFadden, G. W.	Atlanta	Chester White and Poland China
Newburn, E.	Hennepin	Chester White
Ramsey, J. M.	Jacksonville	Berkshire
Rice, Tilford	Lenox	Poland China and Berkshire
Reed, A.	Jacksonville	Essex
Stoner, George W.	LaPlace	Other distinct breeds
Taylor Bros.	Waynesville	Small Yorkshire and Suffolk, Berkshire and Chester White
Work, J. M.	Bardolph	Berkshire
	INDIANA.	
Lawrence, J. A	Connersville	Poland China
	PENNSYLVANIA.	
Harris & Norton	Aldenville	Small Yorkshire and Suffolks and Berkshire
	MARYLAND.	
Fulford, A. M.	Belair	Berkshire
	MICHIGAN.	
Willson, Frank	Jackson	Small Yorkshire and Suffolk and Essex
	CANADA.	
Sorby, H. & O.	Guelph.	Berkshire

The following table gives the number of entries, amount of premiums offered and paid, in this class, at the late Fair:

Lot.	Breed, Etc.	Number of Entries. 2 years old or over	Number of Entries. 1 year old and under 2	Number of Entries. Under 1 year old	Total number entries	Amount premiums offered	Amount premiums paid
54	Berkshire boars	7	8	19	34	$85	$85
54	Berkshire sows	8	18	20	46	85	85
54	Berkshire sow and pigs	..	...	...	9	30	30
54	Berkshire boar and 4 sows	...	...	...	4	25	25
54	Berkshire boar, with 5 of his get	....	...	..	7	20	20
55	Berkshire sweepstakes, boar	....	...	...	19	20	20
55	Berkshire sweepstakes, sow	...	...	...	22	20	20
	Total	15	26	39	141	$285	$285
56	Poland China boars	4	6	14	24	85	85
56	Poland China sows	12	7	19	38	85	85
56	Poland China sow and pigs	...	...	...	6	30	30
56	Poland China boar and 4 sows	...	...	...	5	25	25
56	Poland China boar, with 5 of his get	....	...	...	4	20	20
57	Poland China sweepstakes, boars	....	...	...	17	20	20
57	Poland China sweepstakes, sows	...	....	...	23	20	20
	Total	16	13	33	117	$285	$285
58	Chester White boars	2	4	10	16	85	85
58	Chester White sows	5	4	8	17	85	85
58	Chester White sow and pigs	...	....	....	4	30	30
58	Chester White boar and 4 sows	...	...	...	2	25	25
58	Chester White boar, with 5 of his get	....	...	...	3	20	20
59	Chester White sweepstakes, boars	..	...	..	9	20	20
59	Chester White sweepstakes, sows	...	..	...	9	20	20
	Total	7	8	18	60	$285	$285
60	Essex boars	3	4	5	12	85	85
60	Essex sows	5	6	7	18	85	85
60	Essex sow and pigs	...	...	..	5	30	30
60	Essex boar and 4 sows	...	....	...	2	25	25
60	Essex boar, with 5 of his get	...	..	....	4	20	20
61	Essex sweepstakes, boars	....	...	...	8	20	20
61	Essex sweepstakes, sows	...	...	...	8	20	20
	Total	8	10	12	57	$285	$285
62	Small Yorkshire and Suffolk boars	4	3	6	13	85	85
62	Small Yorkshire and Suffolk sows	5	5	9	19	85	85
62	Small Yorkshire and Suffolk sow and pigs	...	...	...	4	30	30
62	Small Yorkshire and Suffolk boar and 4 sows	....	...	...	1	25	25
62	Small Yorkshire and Suffolk boar, with 5 of his get	...	...	....	2	20	20
63	Small Yorkshire and Suffolk sweepstakes, boars	...	...	...	5	20	20
63	Small Yorkshire and Suffolk sweepstakes, sows	...	...	...	8	20	20
	Total	9	8	15	52	$285	$285
64	Other distinct breeds, boar and 5 sows	...	..	...	2	50	40
	Grand total	55	65	117	429	$1,475	$1,465

Respectfully submitted,
DAVID GORE,
Supt. Class D, Swine.

CLASS E—POULTRY.

REPORT OF H. D. EMERY, *Superintendent.*

To the State Board of Agriculture:

As superintendent of the Poultry class at the late Fair, I beg leave to report a most creditable display of poultry of the various breeds, showing marked improvement in the quality of fowls shown. The display of water-fowls was the best that has ever been made at any previous Fair.

The following parties exhibited the varieties set opposite their respective names:

Name.	Postoffice.	Variety.
	ILLINOIS.	
Apgar, Cary F	Peoria	Asiatic chicks
Bartlett, P. A	Jacksonville	Guineas, Chickens, Geese, Ducks, Turkeys
Blenz & Wheelock	Decatur	Geese, Ducks, Chickens
Butler, J. H	Bloomington	
Bartholomew, A. G.	Elmwood	Ducks, Chickens
Dunlap, George	Bloomington	Turkeys
Darnell, J. C	Elmwood	Asiatic Chickens
Frink, G. V	Bloomington	Asiatic Chickens
Foot, J. B.	Norwood Park	Asiatic Chicks
Leaton, J. H	Bloomington	Chickens
Phelps & Tull	Canton	Chickens
Popkess, J. E	Paris	Rabbits, Ducks, Turkeys, Am. White Ferrets,
Pratt, W. A	Elgin	American White Ferrets.... [English Ferrets
Reed, Abram	Jacksonville	Geese, Guineas
Ringhouse, H	Bloomington	Chickens
Rosentreter, F. L.	Peoria	Display of Ornamental Birds (Singing)
Speckerd, Allan	Clinton	Chickens
Thorn, Wm	Mossville	American White Ferrets, English Ferrets
Wright, C. F	Peoria	Display of Dogs
	MICHIGAN.	
Benham, F. M	Olivet	Polish Chickens

The entries, offerings and awards at the late Fair were as follows:

Lot	Breed, etc.	Number of entries.	Amount premiums offered.	Amount premiums paid.
65	Asiatic	44	$70	$55
66	Dorking, Dominique, Plymouth Rock	10	50	19
67	Spanish	7	50	16
68	Hamburgs	12	60	30
69	Polish	5	50	14
70	French	4	30	11
71	Game	14	120	27
72	Bantams	34	90	43
73	Miscellaneous	1	40	3
74	Guineas	4	20	11
75	Turkeys	12	72	34
76	Ducks	21	45	33
77	Geese	9	30	22
78	Rabbits	12	35	30
79	Ferrets	10	10	10
80	Displays	6	40	40
	Total	205	$812	$398

Respectfully submitted,
H. D. EMERY,
Supt. Class E—Poultry.

CLASS F—MECHANIC ARTS.

SECTION 1.

REPORT OF WM. VOORHIES, JR., *Superintendent.*

To the State Board of Agriculture.

The display of articles in this department at the late Fair exceeded that of the previous year, and the number of new and useful inventions was much larger than at previous Fairs.

The enlarged capacity was taxed to the utmost to accommodate the articles entered for competition and display in this class.

The many miscellaneous articles favorably considered by the committee are so noted in the entry books.

The entries, offerings and awards at the late Fair are as follows·

Lot	Articles.	Number of entries.	SILVER MEDALS.		DIPLOMAS		CASH PREMIUMS	
			No. offered.	No. awarded	No. offered.	No. awarded	Amount offered.	Amount paid.
81	Stoves, castings, etc	17	14	4	1	1	$35	$35
82	Household furniture.......	31	7	2	1	1	30	30
83	Manufactures	20	43	11				
84	Sewing and knitting machines, etc....	24						
	Total....................	92	64	17	2	2	$65	$65

Respectfully submitted,
WM. VOORHIES, JR.,
Supt. Class F, Sec. 1.

CLASS F—MECHANIC ARTS.

SECTION II.

REPORT OF B. PULLEN, *Superintendent.*

To the State Board of Agriculture.

The display of machinery at the late Fair in extent and variety has never been excelled. The acres of machinery on exhibition included almost every description of implement adapted to agricultural and other uses.

The number of new inventions of merit was unusually large and instructive, and indicates the increased attention given by manufacturers to this class of labor-saving implements.

The exhibiters of machinery add in no small degree to the attractions of the Fair, and receive but little recognition in the way of money awards.

The exhibiters of traction engines have repeatedly petitioned the Board for the privilege of showing their engines in front of the amphitheatre during the week of the Fair, and it is recommended that this opportunity be afforded, providing the track is in suitable condition.

There has been material improvement in the construction and adaptability to various uses of traction engines, and it is suggested that provision be made in the next premium list for competition between the exhibiters of this class of engines.

The entries, *offerings* and awards at the late Fair are given in the following table:

Lot	Articles.	Number of entries....	Silver Medals.		Diplomas.		Cash Premiums.	
			No. offered.	No. awarded	No. offered.	No. awarded	Amount offered.	Amount paid.
85	Engines, machinery, etc.	78	26	12	7	6	$50	$50
86	Light machines	1	15	....	....	....	....	....
87	Implements, vehicles, etc.	83	11	7	6	5	55	45
88	Farm machinery.....	490	....	....	....	....	....	....
	Total....................	652	52	19	13	11	$105	$95

The following exhibit was made in this class at the late Fair. It will be seen that the display was large and varied.

Respectfully submitted,

B. PULLEN,
Supt. Class F, Section II.

FARM MACHINERY ON EXHIBITION.

Threshers—
- Gaar, Scott & Co., Richmond, Ind.
- Kingman & Co., Peoria—3 entries.
- Seymour, Sabin & Co., Stillwater, Minn.
- Geo. W. Rouse & Son, Peoria—3 entries.

Separators—
- M. & J Rumely, LaPorte, Ind.
- Nichols, Shepherd & Co., Battle Creek, Mich.
- Huber Manufacturing Co., Marion, O.
- Kingman & Co., Peoria—3 entries.
- Upton Manufacturing Co., Battle Creek, Mich.
- Geo W. Rouse & Son, Peoria—3 entries.
- Union Iron Works, Decatur—2 entries.

Hedge Trimmers—
- S. J. Vance, Waverly.

Reapers—
- Champion Machine Co., Springfield, O.
- Kingman & Co., Peoria—2 entries.
- John B. Manny, Rockford.
- Wm. Deering, Chicago.
- Geo. W. Rouse & Son, Peoria.

Droppers—
- Champion Machine Co., Springfield, O.
- Kingman & Co., Peoria—2 entries.
- Geo. W. Rouse & Son, Peoria.

Self Rake Reapers—
- Kingman & Co., Peoria—2 entries.
- Wayne Agricultural Co., Richmond, Ind.

Mowers—
- The Plano Manufacturing Co., Plano.
- Walter A. Wood, Chicago.
- F. Bigelow, Rockford.
- Wayne Agricultural Co., Richmond, Ind.
- Emerson, Talcott & Co., Rockford.
- Wm. Deering, Chicago.
- McCormick Harvesting Machine Co., Chicago.
- Kingman & Co., Peoria—3 entries.
- Champion Machine Co., Springfield, O.—2 entries.
- Geo. W. Rouse & Son, Peoria.
- John B. Manny, Rockford.
- John C. Rennison, Chicago.
- Rhea, Smalley & Co., Peoria—2 entries.
- B. D. Fritts, Plano.
- St. Paul Harvester Works, St. Paul, Minn.
- Mast, Foos & Co., Springfield, O.—2 entries.

Combined Reaper and Mower—
- McCormick Harvesting Machine Co., Chicago.
- Geo. W. Rouse & Son, Peoria.
- Champion Machine Co., Springfield, O.
- Kingman & Co., Peoria—2 entries.
- Walter & Wood, Chicago.

Grain Binders (Wire)—
- Kingman & Co., Peoria.
- Geo. W. Rouse & Son, Peoria.

Harvesters and Binders—
- The Plano Manufacturing Co., Plano.
- Wm. Deering, Chicago.
- Geo. W. Rouse & Son, Peoria.
- McCormick Harvesting Machine Co., Chicago.
- St. Paul Harvesting Works, St. Paul, Minn.
- Rhea, Smalley & Co., Peoria.
- Minneapolis Harvester Works, Minneapolis, Minn.
- Champion Machine Co., Springfield, O.
- Kingman & Co., Peoria—2 entries.

Self-Binders—
- Kingman & Co., Peoria—2 entries.
- Geo. W. Rouse & Son, Peoria.

Grain Headers—
- Geo. W. Rouse & Son, Peoria.

Horse Rakes—
- Rhea, Smalley & Co., Peoria.
- Geo. W. Rouse & Son, Peoria—2 entries.
- Kingman & Co., Peoria—3 entries.
- F. Bigelow, Rockford.
- Keystone Manufacturing Co., Sterling.
- Grand De Tour Plow Co., Dixon.
- J. H. Thomas & Son, Springfield, O.—3 entries.
- Beedle & Kelly, Troy, O.
- A. W. Coats & Co., Bloomington.

Cider Mills—
- B. W. Palmer, Chicago.
- P. P. Mast & Co., Springfield, O.—2 entries.
- Ewald Over, Indianapolis, Ind.

Corn and Cob Mills—
- J. A. Field & Co., St. Louis, Mo.

Wind Mills—
- J. W. Osborn, Dixon.
- W. D. Nichols, Batavia.
- Sandwich Enterprise Co., Sandwich.
- Rhea, Smalley & Co., Peoria—2 entries.
- Mast, Foos & Co., Springfield, O.—2 entries.
- Kingman & Co., Peoria.
- Geo. H. Lucas, Pekin.
- Æra Wind Engine Co., Henry.
- Perkins Wind Mill and Axe Co., Mishawaka, Ind.

Corn Stalk Cutters—
- Kingman & Co., Peoria—3 entries.
- Wayne Agricultural Co., Richmond, Ind.
- Deere & Mansur Co., Moline.
- Geo. W. Rouse & Co., Peoria—3 entries.
- Parlin & Orendorff, Canton.
- Geo. W. Brown, Galesburg.

Power Corn Shellers—
- Kingman & Co., Peoria.
- Keystone Manufacturing Co., Sterling.
- Union Iron Works, Decatur—2 entries.
- King, Hamilton & Co., Ottawa.
- Geo. W. Rouse & Son, Peoria—2 entries.

Harvesters—
- Kingman & Co., Peoria.
- Geo. W. Rouse & Son, Peoria—2 entries.

Gang Plows—
- Kingman & Co., Peoria.
- Stewart Neill, Chillicothe.

Walking Plows—
- Kingman & Co., Peoria—4 entries.
- Scandia Plow Co., Rockford—2 entries.
- Norwegian Plow Co., Dubuque, Ia.—11 entries.
- J. I. Case & Co., Racine, Wis.
- Weir Plow Co., Monmouth.
- Grand De Tour Plow Co., Dixon.
- John T. Walton, Bloomington—7 entries.
- Moline Plow Co., Moline—50 entries.
- Geo. W. Rouse & Son, Peoria—5 entries.

Briggs & Enoch, Rockford.
R. C. Buckley, Peoria.
Deere & Mansur Co., Moline—12 entries.
Parlin & Orendorff, Canton—30 entries.

Sulky Plows—
Oliver Chilled Plow Works, South Bend, Ind.—2 entries.
Grand De Tour Plow Co., Dixon.
Kingman & Co., Peoria—2 entries.
Norwegian Plow Co., Dubuque, Ia.
P. P. Mast & Co., Springfield, O.
Moline Plow Co., Moline.
J. I. Case & Co., Racine, Wis.
Briggs & Enoch, Rockford.
Parlin & Orendorff, Canton—3 entries.
D. Hagne, Rockford.
Weir Plow Co., Monmouth.
Stewart Neill, Chillicothe.
Geo. W. Rouse & Son, Peoria—2 entries.
R. C. Buckley, Peoria.
John T. Walton, Bloomington—2 entries.
Pattie Plow Co., Monmouth—2 entries.
J. F. Crumpet, Summit.
Deere & Mansur Co., Moline.
Geo. W. Brown, Galesburg.

Harrows—
F. C. Ramkey, Burlington, Ia.
P. P. Mast & Co., Springfield, O.
Moline Plow Co., Moline—5 entries.
Deere & Mansur, Moline—2 entries.
Rhea, Smalley & Co., Peoria—2 entries.
R. C. Buckley, Peoria—4 entries.
Evans & Foos Manufacturing Co., Springfield, O.
J. I. Case & Co., Racine, Wis.
Geo. W. Rouse & Son, Peoria—2 entries.
Kingman & Co. Peoria—3 entries
Parlin & Orendorff, Canton—3 entries.
J. P. Warner & Co., Dowagiac, Mich.
Keystone Manufacturing Co., Sterling.
Nash & Bro., New York City—2 entries.
R. Lean, Mansfield, O
A. Wilcox & Co., Clarence, Iowa.

Cultivators—
Sandwich Enterprise Co., Sandwich.
P. P. Mast & Co., Springfield, O.—2 entries.
Ewald Over, Indianapolis, Ind.
Kingman & Co., Peoria—3 entries.
Grand DeTour Plow Co., Dixon.
J. P. Warner & Co., Dowagiac, Mich.
Moline Plow Co., Moline.
F. Bigelow, Rockford—2 entries.
Geo. W. Rouse & Son, Peoria.
Samuel Day, Delavan.
Briggs & Enoch, Rockford.
J. I. Case & Co., Racine, Wis.
R. C. Buckley, Peoria—4 entries.
Parlin & Orendorff, Canton—5 entries.
Geo. W. Brown, Galesburg.
Pattie Plow Co., Monmouth—2 entries.
Deere & Mansur Co., Moline—2 entries.
J. W. Davis, Elvaston.

Corn Planters—
Geo. W. Rouse & Son, Peoria—3 entries.
Evans & Foos Manufacturing Co., Springfield, Ohio.
Geo. W. Brown, Galesburg—4 entries.
J. P. Warner, Dowagiac, Mich.
Deere & Mansur Co., Moline.
Parlin & Orendorff, Canton—5 entries.
Hurst, Dunn & Co., Peoria—4 entries.
Emerson, Talcott & Co., Rockford—2 entries.
Kingman & Co., Peoria—4 entries.
Fred. Siedeentopf, Peoria.
Beedle & Kelly, Troy, O.
Moline Plow Co., Moline.
Briggs & Enoch, Rockford.
James Selby, Peoria—4 entries.

Corn Drills—
Beedle & Kelly, Troy, O.
Geo. W. Rouse & Son, Peoria.
Briggs & Enoch, Rockford.
Evans & Foos Manufacturing Co., Springfield, O.
D. E. McSherry & Co., Dayton, O.

Check Rowers—
    J. Harvey & Co., Aledo.
    Geo. W. Rouse & Son, Peoria—7 entries.
    Campbell & Brown, Kirkwood.
    Kingman & Co., Peoria—2 entries.
    Hurst, Dunn & Co., Peoria—2 entries.
    E. Miller, Goodland, Ind.
    Deere & Mansur Co., Moline.
    Tate Bro. & Co., Decatur.
    A. W. Lloyd, Lincoln.
    Geo. W. Brown, Galesburg.
    J. I. Case & Co., Racine, Wis.
    Chas. A. Sweeny, Geneseo.

Grain Drills—
    Rhea, Smalley & Co., Peoria.
    Ewald Over, Indianapolis, Ind.
    D. E. McSherry & Co., Dayton, O.
    Kingman & Co., Peoria—2 entries.
    S. B. Hart & Co., Peoria—3 entries.
    P. P. Mast & Co., Springfield, Ohio—5 entries.
    Mechanicsburg Machine Co., Mechanicsburg, O.
    Wayne Agricultural Co., Richmond, Ind.
    Geo. W. Rouse & Son, Peoria—3 entries.

Seed Sowers—
    Emerson, Talcott & Co., Rockford.
    Kingman & Co., Peoria—3 entries.
    J. P. Warner, Dowagiac, Mich.
    Mechanicsburg Machine Co., Mechanicsburg, O.
    P. P. Mast & Co., Springfield, O.—2 entries.
    Wayne Agricultural Co., Richmond, Ind.—2 entries.
    Parlin & Orendorff, Canton.

Rollers—
    Sweitzer & King, Pekin.

Fanning Mills—
    Diamond Fanning Mill Co., Detroit, Mich.

Hand Corn Shellers—
    Kingman & Co., Peoria—2 entries.
    Geo. W. Rouse & Son, Peoria—6 entries.
    Keystone Manufacturing Co., Sandwich.

Hay Loaders—
    Keystone Manufacturing Co., Sterling.

Grain Binders (twine)—
    The Plano Manufacturing Co., Plano.
    Kingman & Co., Peoria.
    Walter A. Wood, Chicago.
    Geo. W. Rouse & Co., Peoria.
    B. D. Fritts, Plano.

MISCELLANEOUS.

Riding Cultivator—
    Sandwich Enterprise Co., Sandwich.

Grain Register—
    Peoria Grain Register Co., Peoria—2 entries.

Plow Truck—
    John Caton, West Jersey—2 entries.

Railroad Plow—
    Norwegian Plow Co., Dubuque, Ia.

Carrier and Drop Attachment to Self-Binder—
    W. H. McMackin, Washington.

Building for Exhibiting Machinery—
    Moline Plow Co., Moline.

Brick and Tile Machine—
    J. W. Penfield, Willoughby, O.

Corn Planter with Drill Attachment—
    Deere & Mansur Co., Moline.

Newell & Lucasse Non-Packing Valves—
    Kalamazoo Tubular Well Co., Kalamazoo, Mich.

Adjustable Stroke Pump—
Kalamazoo Tubular Well Co., Kalamazoo, Mich.

Patent Scoop Board—
J. C. Blaisdell, Bradford.

CLASS G—FARM PRODUCTS.

REPORT OF J. M. WASHBURN, *Superintendent.*

To the State Board of Agriculture:

The quality of the articles exhibited at the late Fair will compare most favorably with any preceding Fair.

The number of entries is not as large as last year, but the extent of the display occupied the enlarged space assigned to this department.

The past season has not been favorable for the growth of farm products, owing to the drouth which prevailed in the central and southern portions of the State during the growing season.

The display, considering the unfavorable season, was large and creditable.

The entries, offerings and awards were as follows

Lot.	Articles.	Number of entries.	Diplomas.		Cash Premiums.	
			No. offered.	No. awarded	Amount offered.	Amount paid.
89	Grains and seeds	105	1		$237	$178
90	Vegetables	106			157	139
91	Butter, cheese, etc	15	5	2	128	53
92	Bread, cakes, etc	92	1		147	114
93	Bread and cakes, by girl under 14 years of age.	43			90	68
	Total	361	7	2	$759	$552

Respectfully submitted,
J. M. WASHBURN,
Supt. Class G.

CLASS H—HORTICULTURE AND FLORICULTURE.

REPORT OF GEO. S. HASKELL, *Superintendent.*

To the State Board of Agriculture:

The display of fruits and flowers, while not as large as last year, was most creditable, considering the dry season and other unfavorable conditions.

The various collections of fruit attracted much attention, and there has never been more interest manifested in this department of the Fair by the horticulturists of this and neighboring States.

The following tables give the number of entries, amount of premiums offered and paid at the late Fair.

The exhibit was largely made up by residents of Northern Illinois, Iowa and Michigan:

SECTION 1.

Lot.	Articles.	Number of entries.	SILVER MEDALS.		DIPLOMAS.		CASH PREMIUMS.	
			No. offered.	No. awarded	No. offered.	No. awarded	Amount offered.	Amount paid
94	Trees, flowers and plants (professional)........ ..	40	3	1	4	1	$254	$163
95	Cut flowers (professional)	73	....	....	2	2	258	210
96	Flowers and plants (amateur).....	21	....	....	....	....	77	46
97	Cut flowers (amateur)......	80	....	....	....	....	136	78
	Total................. .,	214	3	1	6	3	$725	$497

SECTION 2.

Lot.	Articles.	Number of entries.	SILVER MEDALS.		DIPLOMAS.		CASH PREMIUMS.	
			No. offered.	No awarded	No. offered.	No awarded	Amount offered.	Amount paid.
98	Home-grown fruits (professional)......... ..	56	....	....	....	....	$289	$255
99	Home-grown fruits (amateur).	51	....	....	....	....	94	69
100	Jellies, preserves, pickles, etc	42	1	....	3	1	178	153
	Total...	149	1	....	3	1	$561	$477

Respectfully submitted,

GEO. S. HASKELL,

Supt. Class H, Horticulture.

CLASS I—FINE AND LIBERAL ARTS.

REPORT OF JOHN P. REYNOLDS, *Superintendent.*

To the State Board of Agriculture

I have the honor to report that the exhibit of works of art at the late Fair was large and creditable.

The unusually large number of entries made it difficult to display the collections to the best advantage.

The interest in this department by the majority of visitors at the Fair is evidence of the increased attention given to art matters, of late years, by the general public.

It is recommended that premiums be offered, at the forthcoming Fair, for free-hand crayon drawing and solar-print crayon work.

The following table gives the number of entries, amount of premiums offered and paid in each lot at the late Fair:

Lot	Articles.	Number of entries	SILVER MEDALS		DIPLOMAS.		CASH PREMIUMS.	
			No. offered.	No. awarded	No. offered.	No. awarded	Amount offered.	Amount paid.
101	Fine arts	100	23	17	1	1	$45	$15
102	Musical instruments	9	6	5	6	....	....	....
103	Printing, engraving, etc	31	11	5	9	1	....	....
104	Wax, feather, hair work, etc	46	3	1	1	....	46	41
	Total	186	43	28	17	2	$91	$56

Respectfully submitted,
JOHN P. REYNOLDS,
Superintendent Class I, Fine and Liberal Arts.

CLASS K—TEXTILE FABRICS.

REPORT OF E. H. BISHOP, *Superintendent.*

To the State Board of Agriculture

The number of entries in this department was much below that of the previous year and while there were many meritorious displays, the entire exhibit, in quality, was in keeping with the limited number of entries

The local exhibit was very meagre, and indicated a want of interest on the part of the ladies residing in Peoria and vicinity.

It is to be hoped that the ladies' department will be more liberally patronized at the next Fair by exhibiters of mill fabrics, household fabrics, plain and ornamental needle-work.

There was a large crowd of visitors in this department during the continuance of the Fair, who found much to interest and instruct, in the examination of the many excellent specimens of handiwork and ingenious patterns of costly material.

The following table gives the number of entries, amount of premiums offered and paid to this class at the late Fair:

Lot	Articles.	Number of entries	DIPLOMAS.		CASH PREMIUMS.	
			No. offered.	No. awarded	Amount offered.	Amount paid.
105	Mill fabrics, etc	....	13	....	....	....
106	Household fabrics	89	....	....	$105	$95
107	Hand-sewing—plain garments	70	....	....	48	46
108	Ornamental needle-work	318	....	....	194	185
109	Fancy work	172	....	....	82	73
110	Needle-work, by girl under 14 years of age	111	....	....	89	79
111	Quilts and needle-work	82	....	....	69	63
	Total	842	13	....	$587	$541

Respectfully submitted,
E. H. BISHOP,
Superintendent Class K.

CLASS L—NATURAL HISTORY.

REPORT OF JOHN P. REYNOLDS, *Superintendent.*

To the State Board of Agriculture:

The exhibit in this class was large, and the display of mound relics was probably the best ever collected together in the State.

The entomological exhibition was complete and scientifically arranged, and, while the number of competitors was limited, the collections fairly represented the entomology of the State.

There were several interesting botanical collections on exhibition which attracted attention.

The following table gives the number of entries, amounts of premiums offered and paid in this department at the Fair of 1881.

Lot.	Articles.	Number of entries.	Amount premiums offered.	Amount premiums paid.
112	Taxidermy, mineralogy and conchology	10	$230	$190
113	Entomology, botony, etc	4	105	75
	Total	14	$335	$265

Respectfully submitted,

JOHN P. REYNOLDS,

Superintendent Class L

CLASS M—SPEED.

REPORT OF DAVID E. BEATY, *Superintendent.*

To the State Board of Agriculture:

The following table gives the number of entries, amount of premiums offered and paid for tests of speed at the late Fair.

The entry fees were added to the stakes, which will explain the increase in amounts of premiums paid over the premium offered.

Lot.	Race.	Number of entries.	Amount premiums offered.	Amount premiums paid.
114	Running race—2 and under 3 years—Stake, $100	3	$100	$130
114	Trotting stallions—Stake, $200	5	200	300
114	Trotting race—2 and under 3 years—Stake, $200	3	200	260
114	Trotting race—4 and under 5 years—Stake, $150	5	150	225
114	Trotting race—3 and under 4 years—Stake, $150	6	150	240
114	Trotting race—5 and under 6 years—Stake, $150	6	150	240
114	Running race—3 and under 4 years—Stake, $150	3	150	195
	Total	31	$1,100	$1,590

The limited number of entries indicates the want of sufficient inducements to attract a large field of good horses.

Respectfully submitted,

DAVID E. BEATY,

Superintendent Class M.

CLASS N—EDUCATION.

REPORT OF EMORY COBB, *Superintendent.*

To the State Board of Agriculture:

The exhibit in the Educational Department was conducted according to a plan matured by a committee appointed by the Illinois State Teachers' Association, at their meeting in December, 1880.

The plan involved the preparation of questions, and sending them out, through the county superintendents, to the schools that would enter the competition.

The questions were sent out in sealed envelopes, which were opened in the presence of the class when it was ready for the examination.

The papers of the country schools and the graded schools were first examined by the county superintendents, and entries for each premium in lots 115 and 116 were limited to two from each county. The result of this limitation is an apparent falling off in the number of country schools represented in the exhibit; but when it is remembered the two entries made from one county were sometimes selected from twenty or more papers, it is readily seen there has been no real falling off in this direction.

The high school exhibit was by far the largest and the best that we have had in the four years since this class was established.

Fifteen high schools, sixteen grammar schools and sixty-two country schools made entries.

Last year I recommended that the Board urge county agricultural boards to offer premiums to the pupils of the public schools of their respective counties.

I renew this recommendation this year, for the reason that some of these school exhibits, notably in Bureau, Champaign, Knox, Stark and Winnebago counties, have shown most excellent results, and have had a direct influence upon the schools of the counties that has been of great good.

The record of the exhibit is as follows

Lot	Exhibit.	Number of entries	DIPLOMAS.		CASH PREMIUMS.	
			No. offered.	No. awarded	Amount offered.	Amount paid
115	Graded school exhibit	71	8	8	$48 00	$48 00
116	Country school exhibit	142	16	14	96 00	82 00
117	Sweepstakes	51	7	7	87 50	87 50
118	High school exhibit	104	15	15	99 00	99 00
	Total	368	46	44	$330 50	$316 50

Respectfully submitted,

EMORY COBB,

Superintendent Class N.

AMPHITHEATRE AND SHOW RING.

REPORT OF J. W JUDY, *Marshal.*

To the State Board of Agriculture·

The unusually large exhibit of stock in the amphitheatre ring increased the duties of the marshal.

The failure of the local committee to grade the ring around the judges' stand made it difficult to display the stock to the best advantage, and it is recommended that the committee of arrangements have the show ring properly graded before the next Fair.

The conveniences of exhibiters and the visitors in the show ring and amphitheatre were carefully considered by the marshal and assistants.

Respectfully submitted,

JAMES W. JUDY,

Marshal of the Ring.

SUPERINTENDENT OF GROUNDS.

REPORT OF D. W VITTUM, Jr

To the State Board of Agriculture

I have the honor to report that the police force employed at the late Fair was ample and that good order was preserved

The conveniences of exhibiters and visitors were carefully considered and all in attendance expressed themselves as well pleased at the attention they received

The Mayor of the city and the Sheriff of Peoria county are entitled to much credit, also the business men of Peoria, for the interest manifested in the success of the Fair, and their efforts conduced largely to the financial success of the exhibition

The officers of the several railroads centering at Peoria made every effort to accommodate exhibiters and visitors and the conveniences thus afforded have never been surpassed at any point where the State Fair has been held

The managers of several of the leading railroads centering at Peoria deserve especial commendation for their efforts to accommodate the crowds in attendance by loading and unloading passengers at the Fair Grounds

The city of Peoria has previously proved to be the best point for holding the State Fair, when the extent of the exhibit and the matter of large receipts are taken into consideration

It is believed that the gate receipts would have largely exceeded that of any previous year, but for the inclement weather during a great portion of the week of the Fair

The superintendents of departments made demand for more space than the specifications called for clearly demonstrating the necessity of locating the Fair at one or three points in the State, where the increasing demands for space from year to year could be met

Respectfully submitted,

D. W VITTUM, Jr,

Superintendent of Grounds

FORAGE AND STALLS.

REPORT OF J. L MOORE, *Superintendent*

To the State Board of Agriculture

The accommodations provided by the Peoria association as to number of stalls filled the requirements of the Board

It was found necessary to construct forty-two additional stalls, which, with the crowding of young stock in the stalls, accommodated the unusually large number of horses and cattle on exhibition

Forage and grain of good quality was furnished at usual market rates, without expense to the Board, and exhibiters expressed themselves as well satisfied with accommodations and supplies

The large and increasing demand for stalls each succeeding year and the large number of animals brought to the Fair for the purpose of sale and not exhibited, prompts the recommendation that stall and pen fees be charged, as follows, Closed horse or cattle stalls, $2 each, open horse or cattle stalls, $1 each, and for each hog or sheep 50 cents.

Exhibiters receive nearly all the receipts of the Fair not required to defray the actual expense, and will not unfavorably consider this small contribution to the large amount distributed in their interests

This policy has been adopted by leading Western Fairs, and meets with no opposition from exhibiters

Respectfully submitted,

J. L MOORE,

Superintendent Forage and Stalls

PRESS DEPARTMENT.

REPORT OF LEWIS ELLSWORTH, *Superintendent.*

To the State Board of Agriculture·

The conveniences provided by the local committee for the accommodation of the Press were ample and satisfactory.

The large number of representatives of the leading papers of the State present, and the space devoted to the Fair by the Press, is good evidence of the interest in this industrial exhibition of the State by the reading public.

The awards and other matters of interest were given to reporters promptly, and every facility offered for obtaining information concerning the Fair.

On account of ill health at the time, I was unable to attend the Fairs. V. B. Kelly, Esq., of Springfield, by request, discharged the duties of Ass't Supt. of the Press Department in a satisfactory manner.

Respectfully submitted,

LEWIS, ELLSWORTH,
Supt. Press Department.

Mr. Gillham introduced the following resolution, which was adopted on motion of Mr. Haskell:

Resolved, That the week commencing Monday, September 25, 1882, be appointed for the holding of the next State Fair, and that the Secretary be instructed to inform by telegram the officers of the Fairs of neighboring States, and the Secretaries of the Fairs held at St. Louis and Chicago.

Motion of Mr. Gillman carried:

That the several superintendents be authorized to submit, at their early convenience, recommendations concerning new classifications of premiums for their respective departments for the Fair of 1882.

On motion of Mr. Haskell,

The Board adjourned to 2 o'clock P. M.

AFTERNOON SESSION.

Board met pursuant to adjournment.

President Scott in the chair.

Present: President Scott, Ex-President Gillham, Vice-Presidents Haskell, Moore, Dysart, Snoad, Vittum, David, Beaty, Judy, Smith, Pullen, Gore and Landrigan.

The following protest was read of Frank Willson, of Jackson, Mich, and George Hood, Guelph, Canada, against the eligibility of Cotswold ewes exhibited by Abner Strawn, of Ottawa, Ill., at the Fat Stock Show; also the affidavit of Mr. Stratton:

PROTEST.

CHICAGO, ILL., November 9, 1882.

We, the undersigned exhibiters, hereby protest against the awards in Lot 18, sweepstakes, on ewes one year old and under two years, and ewes under one year old, exhibited by Abner Strawn, of Ottawa, Ill., on the ground that they are breeding stock, and are proscribed in Rule 8, Class C.

(Seal.) GEORGE HOOD.
(Seal.) FRANK WILLSON.

STATE OF ILLINOIS, }
Cook county. }

The above statement and protest subscribed and sworn to before me this 12th day of November, 1881.

Witness my hand and notarial seal. DANIEL McBAIN, Notary Public.

AFFIDAVIT OF ABNER STRAWN.

CHICAGO, ILL., November 14, 1882.

I hereby certify that the yearling "Cotswold ewes" exhibited by me in Class C, Lot 18, sweepstakes, at the Fat Stock Show, on the 8th day of November, 1881, were bred by Messrs. T. & S. G. Gillett, of Kilkarney, Oxfordshire, England, and that they were fed by those gentlemen for show purposes, and that they were in the first prize pen of yearling ewes at the four principal shows in England, including the English Royal; and that I bought and imported said ewes at a cost of one hundred and twenty dollars ($120) each, for show purposes exclusively, and not for breeding purposes, while the yearling ewes that I brought out at the same time for breeding purposes were of good style and in good breeding condition, and were bred by the same gentlemen, and cost me forty dollars each, which is just one-third the money that my show ewes cost me.

The protest of Messrs. Hood and Willson was not made in accordance with the rules on page 4, rules 5 and 13 of the catalogue, which certify that everything in the way of protest must be done on the day of examination.

The protest was not sworn to until four days after the award was made. There is no notice of protest on the superintendent's books, as required in rule 13, and it was not handed to the Secretary until Sunday, five days after the award.

I being a breeder of pure-bred Cotswold sheep, and believing as I do that there is no other breed of sheep showing as great weight at one year old as the Cotswold, I determined to buy and import the best specimens in England, to show the people of the United States the best specimens of this breed of sheep, and I know of no better place to exhibit them than at the Chicago Fat Stock Show.

Therefore, I will say most emphatically that those yearlings and ewe lambs were bred and fed exclusively for show purposes, and that I bought and imported them to show, and that I never bought them to breed, neither do I intend to keep them for breeding purposes.

ABNER STRAWN.

Subscribed and sworn to before me at Chicago, Ill., this 14th day of November, A. D. 1881.

(Seal.) JOHN R. FLOYD,
Notary Public for Cook county.

Motion of Mr. Landrigan carried,

That the protest be declared not sustained, and that the premiums withheld from Mr. Strawn pending investigation be paid.

Communications were read from the following breeders of Victoria swine, asking that a class be provided for this breed in the premium lists of the Fair and Fat Stock Show, viz Scheidt & Davis, Dyer, Ind.; R. J. Stone, Stonington, Ill.

On motion of Mr. Moore,

The communications were referred to the Superintendent of Class D—Swine.

Communication from John Clay, Jr., of Brantford, Ontario, was read, protesting against the eligibility of the Hereford cow, Maid of the Mist, exhibited at the Fat Stock Show by T. L. Miller, of Beecher, Ill., the protestor claiming that the cow was with calf.

On motion of Mr. Beaty,

The protest was declared not sustained on the ground of informality.

Communication of the Onondaga Salt Company was read, offering special premiums for butter and cheese salted with salt furnished by the company.

On motion of Mr. Gillham,

The Secretary was instructed to inform the Onondaga Salt Company that the Board declined to depart from the established precedent of not advertising individual premiums in the premium list of the Illinois State Fair.

Communication of O. W. Huff, of Wataga, Ill., was read, asking for premium on miscellaneous award recommended by the committee for an exhibit of fruit at the late Fair.

On motion of Mr. Haskell,

The communication was referred to the Committee on Miscellaneous Awards.

Communication of C. M. Culbertson, of Chicago, was read, asking the Board to cooperate with managers of the principal Western Fairs, with a view of having a uniform classification of premiums agreed upon.

On motion of Mr. Dysart,

The communication was referred to the Superintendent of Class A—Cattle.

Communication of J. A. Countryman, of Rochelle, Ill., was read, recommending a reduction in number of hogs to be shown at the Fat Stock Show in place of car-load lots.

On motion of Mr. Snoad,

The communication was referred to the Superintendent of Class D—Swine.

The following communication of E. W. Bennett, of Mechanicsburg, Ill., was read:

MECHANICSBURG, ILL., October 24, 1881.

President Illinois State Board of Agriculture

I have the honor to call your attention to the growing interest in the breeding of saddle horses in this State, and would suggest for your favorable consideration the importance of completing the lot for saddle horses in the next State Fair premium list, so as to include stallions, mares and geldings of the several ages as named in your premium lists for roadsters, draft and other distinct classes of horses.

You are well aware that the training of saddle horses commences with the suckling colt, that quickly learns all the various gates by being led by halter.

Colts under three years of age in the saddle ring are generally exhibited by an attendant mounted on horseback

The exhibition of young saddle horses will attract as much attention as any other show in the ring, and the offering of premiums therefor will ensure a large attendance each year at the State Fair of valuable young saddle horses that, under the present classification of premiums, are excluded.

Yours truly,

E. W. BENNETT.

On motion of Mr. Haskell,

The communication was referred to the Superintendent of Class B—Horses.

Communication of Mrs. L. Harrison, of Peoria, was read, asking for additional premiums for honey and bee keepers' appliances.

On motion of Mr. Moore,

The communication was referred to the Superintendent of Class G—Farm Products.

Communication of the Illinois Swine Breeders' Association was read, asking that a lot be made at the Fat Stock Show for dressed hogs, also an increase in the premiums for the swine class at the Fat Stock Show.

On motion of Mr. Dysart,

The communication was referred to the Superintendent of Class D—Swine.

Thomas J. Brown, of Washington, D. C., presented a plan for collecting and publishing meteorological observations collected in the several counties in the State by volunteer observers.

On motion of Mr. Vittum,

The consideration of the plan was referred to a committee of three, to be appointed by the President.

The President appointed as said committee Messrs. Vittum, Snoad and Smith.

Communication of N. Rowe, of Chicago, was read, in reference to holding, in connection with the next Fat Stock Show, a show of dogs.

On motion of Mr. Haskell,

The communication was referred to a committee of three, to be appointed by the President.

The President appointed as said committee:

Messrs. Haskell, Reynolds and Snoad.

Mr. Gillham moved that the rules and regulations, published in the premium list for the Fair of 1881, be adopted for the Fair of 1882.

Mr. Vittum moved to amend the rule in reference to protests, to read as follows:

Rule 7—Notice of protest, concerning awards, must be given to the Superintendent of Department, and a written statement, setting forth the reasons for protesting, verified by affidavit, must be filed with the Secretary on the day the animal or article is exhibited: *Provided*, that protests will be entertained at any time thereafter if the protesting party shall state, under oath, that the facts upon which the protest is made were not in his possession at the time the animal or article was before the Awarding Committee.

Amendment adopted.

Mr. Moore moved to amend the rule in reference to furnishing straw, etc., to read as follows:

Rule 3—Straw will be furnished at convenient points on the grounds without charge; food for stock can be purchased, at market rates on the grounds. The following stall and pen fees will be charged and must accompany the application for entry:

For each closed horse or cattle stall, two dollars.

For each open horse or cattle stall, one dollar.

For each hog or sheep, fifty cents.

For information, apply to the Superintendent of Forage, at his office.

Water will be distributed at convenient points.

Amendment adopted.

Mr. Moore moved to amend the rule in reference to opening the Fair Grounds, to read as follows:

Rule 1—The Fair Grounds will be open for the reception of stock and articles for exhibition, on Thursday, the 21st day of September, etc.

Amendment adopted.

Motion of Mr. Gillham, as amended, carried, and the rules and regulations published in premium list 1881, except as noted above, were adopted for Fair of 1882.

Mr. Snoad moved that only exhibiters be furnished coupon season tickets good during the Fair.

On motion Mr. Beaty,

The question of furnishing coupon tickets to exhibiters was referred to the Auditing Committee and Treasurer, for consideration and report.

The following reports of Superintendents were considered:

PREMIUM LIST ILLINOIS STATE FAIR FOR 1882.

CLASS A—CATTLE.

To the State Board of Agriculture:

I have the honor to recommend the same rules and classification of premiums for the next Fair as published in the Premium List of 1881, with the following new lot for Fat Cattle, only steers or spayed heifers to compete:

Best steer or spayed heifer 3 and under 4 years old	$25 00
Second best	15 00
Best Steer or spayed heifer 2 and under 3 years old	25 00
Second best	15 00
Best steer or spayed heifer 1 and under 2 years old	20 00
Second best	10 00

It is further recommended that the grand Sweepstakes Herds, for beef and milk breeds, be composed of the same number and ages of animals shown in the herds for the several breeds, viz Bull, two years old or over; Cow, three years old or over; Heifer, two years old and under three; Heifer, one year old and under two; Heifer, under one year old, first premium, $300; second premium, $125; third premium, $75.

Respectfully submitted,

W. M. SMITH,

Superintendent Class A, Cattle.

On motion of Mr. Judy,

The report was adopted.

CLASS B—HORSES.

To the State Board of Agriculture

The communication of E. W. Bennett, of Mechanicsburg, Illinois, in reference to a more complete classification for saddle horses, referred to the Superintendent of Class B, Horses, has received consideration. I would recommend that the classification on saddle horses remain the same as last year, except that the premiums be increased from $20 and $10 to $25 and $15, so that they will correspond in amount with same ages in lots 24, 26, 28, 30 and 33, as published in premium list for 1881.

Respectfully submitted,

D. E. BEATY,

Supt. Class B, Horses.

Mr. Cobb moved to amend by adding a ring for two-year old saddle stallions, mares and geldings, so that the lot for saddle horses shall include stallions, mares and geldings, two and under three years old, three and under four years old, and four years old or over.

Amendment adopted.

Mr. Gillham moved to amend by making the first and second premiums, for the several rings of saddle horses, $20 and $10.

Amendment adopted.

On motion of Mr. Judy,

The report, as amended, was adopted.

Mr. Beaty, Superintendent Class B, Horses, submitted the following report, which was,

On motion of Mr. Gillham,

Adopted.

To the State Board of Agriculture:

In reference to the premium list in the horse department for 1882, would recommend the adoption of the same classification as last year, with the following amendments:

1. That, in lots 25, 29, 31 and 34, the words "to bridle" be stricken out.
2. That lot 32, draft team, be stricken out.
3. That, in lot 36, the word "buggy" be stricken out, so far as it relates to carriage teams.
4. That, in lot 37, gentlemen's driving horses, the instructions be made to read as follows:

"The committee, in making awards, will consider size, style, carriage, speed, and other requisites that make up the highest type of a gentleman's driving horse."

Respectfully submitted,
DAVID E. BEATY,
Supt. Class B, Horses.

CLASS C—SHEEP.

To the State Board of Agriculture:

I have the honor to recommend the classification of premiums for Class C, Sheep, for the Fair of 1882, as published in the premium list of 1881, with the substitution of a money premium of $5 for fleeces, instead of silver medals, as heretofore offered, also, that lot 51 include only French, Silesian and Saxony Merinos.

This will not materially increase the amount of premiums offered to this class last season.

Respectfully submitted,
E. B. DAVID,
Supt. Class C, Sheep.

On motion of Mr. Gillham,
The report was adopted.

CLASS D—SWINE.

To the State Board of Agriculture:

I have the honor to recommend the same classification of premiums for Class D, Swine, for the Fair of 1882 as published in the premium list for 1881, would also recommend that the Chester White and Victorias be placed in the same lot, and that the Suffolks and Yorkshires be shown in the same lot.

A new lot for Grand Sweepstakes is recommended as follows: For best boar and five sows of any age, all to be of any one distinct breed, $50, second best, $25.

Respectfully submitted,
DAVID GORE,
Superintendent Class D, Swine.

On motion of Mr. Smith,
The report was adopted.

CLASS E—POULTRY.

To the State Board of Agriculture:

As superintendent of Class E, Poultry, I submit the same classification of premiums for State Fair of 1882 as published in the classification of premiums for Fair of 1881.

Respectfully submitted,
H. D. EMERY,
Superintendent Class E, Poultry.

On motion of Mr. David,
The report was adopted.

CLASS F—MECHANICS.

SECTION I.

To the State Board of Agriculture

I have the honor to recommend the same classification of premiums for Section 1 Mechanic Arts, for the Fair of 1882, as published in the premium list for Fair 1881

Respectfully submitted,

WM VOORHIES, JR.,

Superintendent Class F, Section 1

On motion of Mr. Pullen,

The report was adopted.

CLASS F—MECHANICS.

SECTION II

To the State Board of Agriculture

I have the honor to recommend the same classification of premiums for this class for the Fair of 1882 as published in the premium list for 1881, with the following additions and changes

1st Add traction engine to Lot 85, with diploma as premium

2d Transfer the premium offered for flower pots to the class for Floriculture.

3d Silver medals to be substituted for cash premiums, in Lots 86 and 87

4th Grain register and clover huller to be added to Lot 88

The changes suggested reduce the cash premiums in this class, as compared with the previous classification over $50

Respectfully submitted,

B PULLEN,

Superintendent Class F, Section 2

On motion of Mr. Haskell,

The report was adopted.

CLASS G—FARM PRODUCTS.

To the State Board of Agriculture

The classification of premiums for this department published in the premium list for 1881 is recommended for the Fair of 1882 with the following additions Lot 90, sweet corn, first and second premiums, $3 and $2 flax seed, first and second premiums $5 and $2, Red-top grass seed, first and second premiums $5 and $2, Lot 92, extracted honey, first and second premiums, $5 and $3, machine for extracting honey, premium, $5

Respectfully submitted

J M WASHBURN,

Superintendent Class G, Farm Products.

On motion of Mr. Haskell,

The report was adopted.

CLASS H—HORTICULTURE AND FLORICULTURE.

To the State Board of Agriculture

I have the honor to recommend the accompanying list of premiums for Class H for the Fair of 1882

The list is about the same as published last year. The amount is $23 less than offered and published in the premium list for 1881.

Respectfully submitted,

GEORGE S HASKELL,

Superintendent Class H, Horticulture and Floriculture.

On motion of Mr. Gore,

The report was adopted.

CLASS I—FINE AND LIBERAL ARTS.

To the State Board of Agriculture :

I have the honor to recommend the same classification of premiums for Class I for the Fair of 1882 as published in the premium list for the Fair of 1881, with the change recommended in my report upon the late Fair, concerning crayon work.

Respectfully submitted,
JOHN P. REYNOLDS,
Superintendent Class I.

On motion of Mr. Cobb,
The report was adopted.

CLASS K—TEXTILE FABRICS.

To the State Board of Agriculture

The classification of premiums presented herewith is recommended for Class K for the Fair of 1882.

The amount of premiums is not as large as last year, and there have been no material changes from the classification published in the premium list for 1881.

Respectfully submitted,
E. H. BISHOP,
Superintendent Class K, Textile Fabrics.

CLASS L—NATURAL HISTORY.

To the State Board of Agriculture

The list of premiums published in 1881 for this class is quite complete and satisfactory to exhibiters.

The same classification is recommended for the premium list for 1882.

Respectfully submitted,
JOHN P. REYNOLDS,
Superintendent Class L, Natural History.

On motion of Mr. Beaty,
The report was adopted.

CLASS M—SPEED.

To the State Board of Agriculture :

The same speed premiums as published in the premium list for 1881 are recommended for the Fair of 1882.

Respectfully submitted,
D. E. BEATY,
Superintendent Class M, Speed.

On motion of Mr. Gore,
The report was adopted.

CLASS N—EDUCATION.

To the State Board of Agriculture

I have the honor to recommend that the same amount of money be apportioned for premiums to Class N, Education, as last year.

There will be no material changes in the classification of premiums from that published in the last premium list.

Respectfully submitted,
EMORY COBB,
Superintendent Class N, Education.

On motion of Mr. Landrigan,
The report was adopted.

On motion of Mr. Gillham,
The Board adjourned to 7½ o'clock P. M.

EVENING SESSION.

Board met, as per adjournment.

President Scott in the chair.

Present President Scott, Ex-President Gillham, Vice-Presidents Haskell, Moore, Dysart, Snoad, Vittum, David, Beaty, Judy, Smith, Pullen, Gore and Landrigan.

Motion of Mr. Vittum carried,
That permits be granted merchants to construct suitable and approved buildings on the Fair Grounds in which to exhibit and sell merchandize; the buildings to be located by the Superintendent of Grounds.

Motion of Mr. David carried,
That the Auditing Committee be instructed to grant no permits at future Fairs to the vendors of cheap jewelry, whips, soap, or small pedlars of any articles.

Mr. Gillham introduced the following resolution, which was adopted, on motion of Mr. Judy:

WHEREAS, Exhibiters have repeatedly called the attention of this Board to the inconvenience and expense resulting from the want of uniformity in the classification of premiums offered, in the classes for live stock, by the several State and prominent Western Fairs; and,

WHEREAS, This Board has been petitioned, by a nnmber of large exhibiters, to coöperate with the State and other prominent Fair Boards, looking towards the adoption of a more uniform classification of live stock premiums, therefore, be it

Resolved, That the Secretary of this Board be directed to call the attention of the managers of the leading Western Fairs to the importance of acceding to the reasonable demands of live stock exhibiters in reference to the adoption of an uniform classification of premiums for live stock;

Resolved, That a copy of these resolutions be sent to the proper officer of the several State and the leading Western Fairs, and if the correspondence following warrants the holding of a convention of delegates to mature the proposed plan, that the President of this Board be, and is hereby, authorized to appoint a delegate to represent this Board in a meeting, to be held at such time and place as may hereafter be agreed upon by a majority of the delegates to the convention.

On motion of Mr. Gillham,
The following lot and premiums were added to Class I, Fine and Liberal Arts:

Lot —. Architectural and Mechanical Drawings:

All drawings, plans and specifications to be complete, and those receiving premiums to become the property of the Board.

Best drawing, plans and specifications for rural residence, cost not to exceed one thousand dollars: Diploma and $10.

Best drawing, plans and specifications for rural residence, cost not to exceed twenty-five hundred dollars: Diploma and $15.

Best drawing, plans and specifications for farm barn, cost not to exceed five hundred dollars: Diploma and $5.

Best drawing, plans and specifications for farm barn, cost not to exceed one thousand dollars: Diploma and $10.

Best drawing, plans and specifications for farm barn, cost not to exceed twenty-five hundred dollars: Diploma and $15.

Best drawing, plans and specifications for farm house and outbuildings, to include dwelling, dairy house, ice house, smoke house, poultry house and hog house; the economy of construction and grouping, with special reference to convenience, to be considered: Diploma and $25.

Best drawing, plans and specifications for district school house, having reference to heating and ventilation: Diploma or Silver Medal.

On motion of Mr. Judy,

Board adjourned to 9 o'clock A. M., Wednesday, January 4, 1882.

DEPARTMENT OF AGRICULTURE,
SPRINGFIELD, ILL., Wednesday, Jan. 4, 1882,
9 O'clock A. M.

Board met, pursuant to adjournment.

President Scott in the chair.

Present—President Scott, Ex-President Gillham, Vice-Presidents Emery, Haskell, Moore, Dysart, Snoad, Cobb, Vittum, David, Beaty, Judy, Smith, Pullen, Gore, and Landrigan.

Minutes of sessions held January 3 were read and adopted.

The Auditing Committee presented their annual report, showing the receipts and disbursements for the past year; which, after considerable discussion, was,

On motion of Mr. Landrigan,

Recommitted.

The following report of the committee to whom was referred the President's address, was received, and,

On motion of Mr. Smith,

Adopted:

To the State Board of Agriculture:

Your committee to whom was referred the President's address, would beg leave to report that they have read the report with much interest, and commend the suggestions contained therein to the careful consideration of the general public.

The committee would recommend the adoption of the following resolutions, covering the several recommendations made by the President:

Resolved, That the recommendations of the President concerning the holding of Farmers' Institute Meetings is most heartily approved, and your committee recommend the holding of at least one institute meeting in each Congressional district in the State during the year 1882.

Resolved, That the Illinois Industrial University is worthy of the hearty support of the citizens of this State; that the superior educational advantages enjoyed by students in attendance are not surpassed by any similar institution.

Resolved, That it is desirable to have a series of experiments conducted in growing the leading crops produced in this State, and it is recommended that a committee of three be appointed by the President to cooperate with the Farm Committee of the Industrial University, and individuals throughout the State, in conducting a series of experiments.

Resolved, That the recommendations concerning the Fat Stock Shows are worthy of consideration, and the committee favor the new lot suggested, offering premiums for steers returning the most profit, taking into consideration the cost of production since birth, as shown in a verified statement to accompany each application for entry.

Resolved, That the employment of expert committeemen by the Board to pass upon the live stock classes at the State Fair and Fat Stock Show is a necessity, and the recommendations of the President in this respect are most heartily approved, and suggested for the adoption by the Board.

Respectfully submitted,

JOHN LANDRIGAN,
GEORG S. HASKELL.
C. SNOAD
D E. BEATY,
SAMUEL DYSART,
Committee.

Motion of Mr. Cobb carried,

That the preparation of programme for the Institute meetings, and arranging details therefore, be referred to the standing Committee on Agricultural and Industrial Education.

Mr. Landrigan introduced the following resolution, which was adopted, on motion of Mr. Pullen:

Resolved, That the Vice-Presidents of this Board be and are hereby requested to cooperate with the Committee on Agricultural and Industrial Education, and the agricultural and horticultural societies in the several districts, in holding, during the present year, Farmers' Institute Meetings, for the promotion of the interests of all engaged in agricultural and industrial pursuits.

Motion of Mr. Smith carried,

That the special order for 7:30 o'clock this P. M. be the consideration of the proposition for holding of a Show of Fat Stock in 1882.

Motion of Mr. Beaty carried,

That a committee of three be appointed by the Chair to report a plan likely to secure the cooperation of the several State Agricultural Boards in promoting the objects for which the Fat Stock Show was held, and giving the exhibitions more of an international character.

The President appointed, as said committee,

Messrs. Beaty, Smith and Gillham.

The Auditing committee made the following report, which was adopted, on motion of Mr. Moore:

To the State Board of Agriculture.

The committee to whom was referred the matter of admission tickets, would recommend the following:

A season coupon ticket, good for one admission each day of the Fair	$1 50
An exhibiter's season ticket, good for admission any time during the Fair	1 50
Single admission (adult)	50
Single admission—children	25
Carriage ticket—single admission (one or two horses)	50
Vehicle—single admission (four horses)	1 00
Single admission ticket—person and horse	75

Respectfully submitted,

SAMUEL DYSART,
JOHN LANDRIGAN,
CHARLES SNOAD,
Auditing Committee.

Mr. Gillham introduced the following resolution, which was adopted, on motion of Mr. Beaty:

Resolved, That the President be *ex officio* a member of all standing committees (except Finance and Auditing) of the Board, and that the party next named in the committee be the chairman of said committee

Mr. Smith introduced the following resolution, which was adopted, on motion of Mr. Vittum:

Resolved, That the thanks of the Illinois State Board of Agriculture are due and hereby tendered to the citizens of Peoria who added so largely to the attractions of the exhibit, and contributed so generously of time and material in making the late State Fair a success

Resolved, That the services of the Mayor of the city of Peoria and the Sheriff of Peoria county are duly appreciated and these gentlemen deserve especial mention for attention shown visitors, as well as for their untiring efforts in preserving order and ministering to the comfort and enjoyment of all in attendance at the Fair

Resolved That the railroad companies and street railroad managers who cooperated so earnestly with this Board in increasing the attendance at the Fair are especially deserving the thanks of this Board

On motion of Mr. Cobb,
The Board adjourned until 2 o'clock P. M.

AFTERNOON SESSION.

Board met, pursuant to adjournment.

President Scott in the chair.

Present President Scott, Ex-President Gillham, Vice-Presidents Emery, Reynolds, Haskell, Moore, Dysart, Snoad, Cobb, Vittum, David, Beaty, Judy, Smith, Pullen, Gore and Landrigan.

The following report was received and adopted, on motion of Mr. Beaty:

To the State Board of Agriculture

The undersigned committee to whom was referred the plan of Thomas J Brown, of Washington D C for the collection and publication of more complete meteorological data, would beg leave to report that the plan is comprehensive, and that it is desirable to have the information collected and given the public promptly

It is believed that these results can be secured by enlarging upon the plan adopted by the Secretary of this Board

Your committee would recommend that the necessary effort be put forth by the Secretary of this Board to secure a meteorological correspondent for each county in the State, to the end that complete and satisfactory reports may be made each month.

Respectfully submitted,

D W. VITTUM, JR.,
W M SMITH,
CHARLES SNOAD,
Committee,

The Treasurer made the following reports, which were,
On motion of Mr. Gillham,
Adopted.

TREASURER'S REPORTS.

State of Illinois

In account with JOHN W. BUNN, Treasurer

Illinois State Board of Agriculture.

	Cr.			
1881.				
January 5.	By unexpended apropr'n, acc't Library	$889 31		
	" " " " Museum	170 32		
	" " " " Crop Reports	207 50		
	" " " " Sec'ary's salary	100 00		
	" " " " Curator	300 00	$1,667 13	
July 1	By amount received from State account Fair premiums	$3,000 00		
	" amount received from State account Secretary's salary	2,400 00		
	" amount received from State account clerk hire	1,500 00		
	" amount received from State account porter	600 00		
	" amount received from State account curator	600 00		
	" amount received from State account museum	500 00		
	" amount received from State account crop statistics	1,000 00		
	" amount received from State account office expenses	1,000 00		
	" amount received from State account library	500 00	11,100 00	
July 1	By amount appropriated for county agricultural boards		7,000 00	$19,767 13
	Dr.			
	To premium account Illinois State Fair	$3,000 00		
	" salary Secretary	2,133 30		
	" " Clerk	1,350 00		
	" " Curator	600 00		
	" " Porter	600 00		
	" Library	166 27		
	" crop statistics	1,089 91		
	" office expenses	1,000 00	$9,889 48	
	To unexpended appropriation salary Sec'y	$366 70		
	" " " " Clerk	150 00		
	" " " " Curator	300 00		
	" " " Museum	670 32		
	" " " Crop statistics	167 59		
	" " " Library	1,223 04	2,877 65	
	To each of the following 70 county agricultural boards, $100, viz Adams, Boone, Brown, Bureau, Carroll, Cass, Champaign, Clark, Coles, Crawford, Cumberland, DeKalb, DeWitt, Douglas, DuPage, Edgar, Edwards, Effingham, Fayette, Ford, Franklin, Fulton, Gallatin, Greene, Hamilton, Hardin, Henderson, Henry, Iroquois, Jasper, Jersey, JoDaviess, Kane, Kankakee, Kendall, Knox, Lake, LaSalle, Livingston, Logan, Macon, Macoupin, Mason, Massac, McDonough, McLean, Menard, Mercer, Morgan, Moultrie, Ogle, Perry, Piatt, Pike, Pope, Richland, Schuyler, Shelby, Stark, St. Clair, Tazewell, Union, Vermilion, Wayne, White, Whiteside, Will, Williamson, Winnebago and Woodford		7,000 00	
				$19,767 13

JOHN W. BUNN, Treasurer.

Springfield, Illinois, January 3, 1882.

Illinois State Board of Agriculture,

In account with JOHN W. BUNN, Treasurer.

	STATE FAIR.			
	DR.			
1881. Jan. 5	To deficit last Fair		$266 82	
	CR.			
1882. July 1	By amount received from State for premiums			$3,000 00
Sept. 30	" " " " Peoria Fair			23,394 08
	DR.			
Dec. 31	To hotel bills, Board, three winter meetings	$460 75		
	" " " " Fair	577 75	1,038 50	
	" Traveling expenses of Board		583 93	
	" Printing and stationery		1,393 26	
	" Assistant Superintendents		748 20	
	" Advertising		571 55	
	" Livery		372 50	
	" Police		706 50	
	" Meals on the Fair Grounds		815 31	
	" Lumber and material		427 08	
	" Expenses departments		330 58	
	" Music		241 40	
	" Labor on Fair Grounds		213 70	
	" Ice water, barrels, rope		178 44	
	" Postage		187 41	
	" Blankets		42 50	
	" Use of furniture on Fair Grounds		20 00	
	" Clerk hire, department work		83 50	
	" Clerks Secretary's office, Fair		45 00	
	" " Treasurer's " "		225 00	
	" " Auditor's " "		120 75	
	" Gatemen at Fair		280 50	
	" Treasurer's commissions		608 93	
	To premiums paid—Class A—Cattle	$4,015 00		
	Class B—Horses	3,141 00		
	Class C—Sheep	1,260 00		
	Class D—Swine	1,465 00		
	Class E—Poultry	398 00		
	Class F—Mechanics	160 00		
	Class G—Farm Products	552 00		
	Class H—Horticulture	974 00		
	Class I—Fine Arts	56 00		
	Class K—Textile Fabrics	541 00		
	Class L—Natural History	265 00		
	Class M—Speed	1,590 00		
	Class N—Education	316 50		
	Silver medals, etc	829 82	15,563 32	
	To deficit Fat Stock Show		596 21	
	To balance		733 19	
			$26,394 08	$26,394 08

JOHN W. BUNN, Treasurer.

Springfield, Ill., January 3, 1882.

ILLINOIS STATE BOARD OF AGRICULTURE,

IN ACCOUNT WITH JOHN W. BUNN, TREASURER.

		FAT STOCK SHOW.			
		DR.			
1881.		To deficit, Fat Stock Show, 1878	$451 81		
Jan.	5	" " " " " 1879	1,861.24		
		" " " " " 1880	578 18		
				$2,891 23	
		CR.			
		By amount receipts, Fat Stock Show, 1881	$2,967 75		
Nov.	12	" " " subscriptions, 1881	4,085 00		
				....	$7,052 75
		DR.			
		To building stalls and pens	$660 00		
		" Lighting Exposition Building	385 20		
		" Music	300 00		
		" Traveling expenses of Board	240 20		
		" Expenses awarding committees	185 20		
		" Hotel bills, Board	540 12		
		" Advertising	384 78		
		" Printing and stationery	218 60		
		" Assistant Superintendents	59 00		
		" Clerks, Treasurer	80 00		
		" " Auditing Committee	77 00		
		" " Secretary	73 85		
		" Doorkeepers	102 00		
		" Police	63 50		
		" Postage	66 60		
		" Use stock scales	15 00		
		" Sawdust bedding	30 00		
		" Labor, forage and straw	33 50		
		" Entry and stall fees returned	7 50		
		" Rent Exposition Building	225 73		
				3,747 78	
		To premiums paid—Class A—Cattle	$2,040 00		
		Class B—Horses	....		
		Class C—Sheep	643 00		
		Class D—Swine	472 00		
		Class E—Poultry	156 00		
		Previous year	12 00		
				3,323 00	
		CR.			
		By deficit, Fat Stock Show, 1878	$451 81		
		" " " " " 1879	1,861 24		
		" " " " " 1880	578 18		
		" " " " " 1881	18 03		
				....	2,909 26
				$9,962 01	$9,962 01

JOHN W. BUNN, Treasurer.

SPRINGFIELD, ILL., January 3, 1882.

The Auditing Committee made the following report, which was received and adopted, on motion of Mr. Haskell:

REPORT OF AUDITING COMMITTEE.

To the Illinois State Board of Agriculture:

The following exhibit of the receipts and disbursements for the past year of the Fair and Fat Stock Show is presented for the information of the Board

	No.	Amount.	Total.
STATE FAIR.			
Cr.			
By State appropriations account of premiums			$3,000 00
PAYING ADMISSIONS.			
By season tickets	886	$1,329 00	
" single admission tickets, adults	34,092	17,046 00	
" single admission tickets, children	2,850	712 50	
" carriage tickets	660	330 00	
Total admissions	38,488		19,417 50
BOOTHS AND PRIVILEGES			
By booths		$3,402 33	
" entry fees		490 00	
" stall fees		84 25	
			3,976 58

Dr.

TO EXPENSES OF DEPARTMENTS.

Class.	Assistant superintendents and clerks	Traveling expenses	Hotel	Livery	Meals at Fair Grounds	Total
A—Cattle	$44 00	$5 00	$10 50	$20 00	$17 00	$96 50
B—Horses	36 00	17 00	38 00	18 00	23 60	132 66
C—Sheep	28 00	12 35	19 00		21 00	80 35
D—Swine	15 00	7 30	18 00		29 00	69 30
E—Poultry	23 30	16 10	18 25		28 33	85 98
F—Mechanics—Sec. 1	31 50	6 50	11 00		12 66	61 66
F—Mechanics—Sec. 2	167 00	11 60	24 25	15 00	27 00	244 85
G—Farm Products	33 00	40 65	20 00		22 66	116 31
H—Horticulture	15 00	20 50	13 50		15 00	64 00
I—Fine Arts	17 50		10 00		8 83	36 33
K—Textile Fabrics	61 00	9 40	12 50		11 00	93 90
L—Natural History	17 50		4 50		8 83	30 83
N—Education	20 40		4 50		4 33	29 23
Marshal of Ring	36 00		26 00	24 00	15 00	101 00
General Superintendent	170 00	40 20	61 00	110 50	282 98	664 68
Auditing Committee	120 75	22 15	73 75	50 00	170 30	436 95
President's office		89 00	13 50	41 50	16 66	160 66
Treasurer's office	225 00		24 25		18 33	267 83
Secretary's office	45 00	43 75	63 00		32 00	183 75
Reception Committee			16 75	34 00	40 32	91 07
Committee of Arrangements		242 43	65 00	34 50		341 93
Forage Department	15 00		19 75	25 00	8 42	68 17
Press Department	18 00		10 50		2 00	30 50
Total	$1138 95	$583 93	$577 75	$372 50	$815 31	$3,488 44

AUDITOR'S REPORT—Continued.

STATE FAIR EXPENSES.

To deficit last Fair, 1880	$266 82	
" deficit Fat Stock Show, 1881	596 21	
" hotel bills, winter meeting	460 75	
" printing and stationery	1,393 26	
" advertising	571 55	
" police	706 50	
" lumber and material	427 08	
" expenses departments	330 58	
" music	241 40	
" labor, Fair Grounds	213 70	
" ice water, barrels, rope	178 44	
" postage	187 41	
" blankets	42 50	
" use furniture	20 00	
" gatemen, Fair	280 50	
" Treasurer's commission	608 93	
" clerk hire in department	83 50	
" premiums State Fair	15,563 32	
" balance	733 19	
	$26,394 08	$26,394 08

FAT STOCK SHOW.

Dr.

To deficit Fat Stock Show (1878—$451.81), (1879—$1,861.24), (1880—$578.18),		$2,891 23	

Cr.

By amount receipts Fat Stock Show 1881	$2,967 75		
" amount subscriptions Fat Stock Show 1881	4,085 00		
		....	$7,052 75

Dr.

TO EXPENSES OF DEPARTMENTS.

Class.	Assistant superintendents and clerks	Awarding committees	Traveling expenses	Hotel	Total	
A—Cattle		$103 20			$103 20	
B—Horses			$11 50	$20 50	32 00	
C—Sheep	$29 00	40 00	4 75	42 00	115 75	
D—Swine	12 00	42 00	8 50	21 50	84 00	
E—Poultry	18 00		3 50		21 50	
F—Mechanics—Sec. 1			4 50	12 00	16 50	
Marshal of Ring				7 00	7 00	
General Superintendent			13 25		13 25	
Auditing Committee	77 00		16 40	82 75	176 15	
Secretary's office	73 85			110 25	184 10	
Treasurer's office	80 00				80 00	
President's office			90 00	58 25	148 25	
Forage department			75 80	73 62	149 42	
Committee of Arrangements				80 25	80 25	
Ex-President				2 25	2 25	
Vice-President 15th district			5 00	5 50	10 50	
Vice-President 18th district			7 00	5 50	12 50	
Vice-President 8th district				15 00	15 00	
Vice-President 3d district				3 75	3 75	
	$289 85	$185 20	$240 20	$540 12	$1255 37	$1,255 37

FAT STOCK SHOW EXPENSES.			
To building stalls and pens	$660 00		
" lighting Exposition building	385 20		
" music	300 00		
" advertising	384 78		
" printing and stationery	218 60		
" doorkeepers	102 00		
" police	63 50		
" postage	66 60		
" use of scales	15 00		
" sawdust for bedding	30 00		
" labor, forage and straw	33 50		
" entry and stall fees returned	7 50		
" rent of exposition building	225 73		
		$2,492 41	
" premiums		3,323 00	
Cr.			
By deficit			$2,909 26
		$9,962 01	$9,962 01

ILLINOIS STATE FAIR.

EXPENSES OF DEPARTMENTS FOR THE PAST FOUR YEARS.

	1878	1879	1880	1881
Class A—Cattle	$71 53	$189 62	$137 63	$96 50
B—Horses	139 79	342 93	187 23	132 66
C—Sheep	83 70	115 42	123 75	80 35
D—Swine	113 20	120 07	109 33	69 30
E—Poultry	61 31	92 15	97 68	85 98
F—Mechanics—Sec. 1	53 67	715 00	108 83	61 66
F—Mechanics—Sec. 2	143 83	206 58	189 42	244 85
G—Farm Products	53 58	132 20	143 47	116 31
H—Horticulture—Sec. 1	85 58	178 81	100 33	64 00
H—Horticulture—Sec. 2	70 00	143 10	88 32	
I—Fine Arts	88 00	85 30	58 25	36 33
K—Textile Fabrics	141 00	206 00	145 33	93 90
L—Natural History	....	53 25	32 25	30 83
N—Education	... ..	....	35 50	29 23
Marshal of Ring	121 25	169 83	153 16	101 00
General Superintendent	311 83	370 50	413 50	664 68
Auditing Committee	314 22	527 32	483 96	436 95
Secretary's office	215 80	230 71	129 16	183 75
Treasurer's office	249 33	277 00	169 33	267 83
President's office	30 33	185 17	183 90	160 66
Reception Committee	116 00	144 25	133 08	91 07
Commmittee of Arrangements	28 50	128 50	27 67	341 93
Forage Department	84 67	122 25	155 25	68 17

Respectfully submitted,

CHARLES SNOAD,
JOHN LANDRIGAN,
SAMUEL DYSART,

Auditing Committee.

On motion of Mr. Vittum,

The Auditing Committee were authorized to purchase one hundred police badges for the use of the Superintendent of Grounds.

The Finance Committee made a report, which was read and discussed, and, on motion of Mr. Smith, re-committed.

On motion of Mr. Judy,

The Board adjourned to 8 o'clock P. M.

EVENING SESSION.

Board met pursuant to adjournment.

President Scott in the chair.

Present—President Scott, Ex-President Gillham, Vice-Presidents Reynolds, Haskell, Moore, Dysart, Snoad, Cobb, Vittum, David, Beaty, Judy, Smith, Pullen and Gore.

Mr. Dysart moved that the vote adopting the report of the Auditing Committee, fixing the price of admission tickets, be reconsidered. Adopted.

The report was discussed and the motion to adopt was lost.

Motion of Mr. Dysart carried,

That the price of admission tickets for the Fair of 1882, be the same as last year.

Mr. Gillham introduced the following resolution, which was, on motion of Mr. Smith, adopted:

Resolved That excessively fat animals entered in the breeding classes will be excluded from competition at the Illinois State Fair and judges are instructed not to award premiums to animals that have been injured for the best results in breeding from overfeeding.

The Finance Committee made the following reports, which were adopted on motion of Mr. Reynolds:

TREASURER'S REPORT.

To the State Board of Agriculture

The Finance Committee would beg leave to report that they have carefully examined the annual report of the Treasurer, John W Bunn for the year ending January 3d 1882, with approved vouchers on file in the office of the Department which have been compared with the warrants of the Secretary and premium checks.

The vouchers agree with the report of the Treasurer, which we find correct, and recommend for the approval of the Board

Respectfully submitted,

EMORY COBB,
W M SMITH
D W VITTTUM, Jr.,
Finance Committee

AUDITOR'S REPORT.

To the State Board of Agriculture

The Finance Committee beg leave to report that they have examined the report of the Auditing Committee, and vouchers for expenditures in connection with the State Fair and Fat Stock Show, held the past year, and find the same correct.

The Finance Committee recommend that Assistant Superintendents serving at the next Fair be paid three dollars per day and board, while on duty—that assistants be allotted the several departments at the next Fair as follows Class A, two, Class B, three; Class C, one, Class D, one, Class E, one, Class F—Sec 1, one, Class F—Sec. 2, one; Class G one, Class H, two, Classes I and L one, Class K, two, Class N, one, Auditing Committee, three, Marshal of Ring, two, Superintendent of Grounds, three.

The Committee would further recommend, that the Secretary open a set of books, showing in detail all receipts and disbursements of the Board

Respectfully submitted,

EMORY COBB,
D. E BEATY,
D W VITTUM, JR.,
W M. SMITH,
Finance Committee

The following resolutions, introduced by Mr. Cobb, were adopted as a substitute for the majority and minority report of committee appointed to secure the co-operation of the State and Provincial boards of Agriculture in the Fat Stock Show:

WHEREAS, The annual Fat Stock Show established by this Board in 1878 at Chicago, has demonstrated its usefulness to the breeding interests of this country, and developed into an institution of national and even international scope and importance, and

WHEREAS It is desirable and equitable to adopt all proper methods in the management of this show, to ensure continued public confidence in the justice and intelligence of the awards of prizes, therefore be it

Resolved, That the several Provincial and State Boards of Agriculture of Canada and the United States be requested to publish the premium list of the Fat Stock show in their respective premium lists

Resolved, That the several organizations mentioned be cordially and earnestly requested to appoint a single judge to serve during the show, said judge to be a practical expert butcher, having extended experience in buying and butchering the best class of meat animals of the several leading imported breeds of stock and their crosses or grades

Resolved, That the Secretary be, and he is hereby instructed to forward a copy of the foregoing resolutions to each of the beforementioned agricultural bodies, and request an early and favorable response.

Resolved, further, That the Secretary is hereby, also instructed to invite said Agricultural organizations to send delegates to the Fat Stock Show as well as to our regular State Fair.

CLASS A—CATTLE.

REPORT OF W. M. SMITH, *Superintendent.*

To the State Board of Agriculture

The following table gives the number of entries, amount of premiums offered and paid to Fat Cattle at the late Fat Stock show.

Owing to illness, which prevented my attendance, Mr. Beaty most acceptably discharged the duties of Superintendent of this class

Breed, Etc.	3 and under 4 years	2 and under 3 years	1 and under 2 years	3 years old or over	Total number entries	Amount premiums offered.	Amount premiums paid
Shorthorn steers	3	7	..	.	10	$180	$120
Shorthorn cows		.		4	4	60	60
Total	3	7	...	4	14	$240	$180
Hereford steers	2	...	..	..	2	180	50
Hereford cows	..	..	.	3	3	60	60
Total	2	..	..	3	5	$240	$110
Devon steers	2	3	3	..	8	180	170
Devon cows	..	.	...		...	60	....
Total	2	3	3	..	8	$240	$170

Number of Entries, Premiums Offered, etc.—Continued.

Breed, etc.	3 years old and under 4......	2 years old and under 3.....	1 year old and under 2......	3 years old or over.........	Total number entries	Amount premiums offered.	Amount premiums paid ....
Other pure beef breeds, steers	...	...	...	...	....	$180	....
Other pure beef breeds, cows	...	..	...	...	...	60	... .
Total	...	...	...	...	....	$240	... .
Grades or crosses, steers	34	33	5	...	72	180	$180
Grades or crosses, cows	...	...	...	2	2	60	50
Total	34	33	5	2	74	$240	$230
Sweepstakes rings	25	27	6	8	66	200	200
Grand sweepstakes	...	..	...	...	30	100	100
Car loads	4	2	...	....	6	675	450
Dressed bullocks	3	2	1	...	6	150	150
Dressed bullocks, sweepstakes	..	...	...	..	6	75	75
Heaviest fat steer	..	...	...	...	10	150	150
Early maturity	10	10	10	..	30	225	225
Grand total	83	84	25	17	255	$2,775	$2,040

Respectfully submitted,
W. M. SMITH,
Supt. Class A, Cattle.

CLASS B—HORSES.

REPORT OF D. E. BEATY, *Superintendent.*

To the State Board of Agriculture:

The exhibition of horses was not as large as expected.

The horses were superior specimens of the several breeds, and attracted much attention.

As will be seen from the following, there was one roadster, three trotters, five Norman, one English draft, and three Clydesdale horses on exhibition

Name and Postoffice of Exhibiters.	Date of Birth.	Weight Nov. 4, 1881	Name of Animal.	Breed.
Lewis Adams, Chicago	Oct., 1876	....	Vetoe.	Roadster.
A. H. Taylor, "	June, 1876	....	Grand Union	Trotter
" "	April, 1873	....	Montgomery.	"
" "	May, 1867	....	Florida.	"
David McKay, Chicago	Oct., 1875	1610	Young Conqueror	Norman
" "	May, 1877	1765	Maria.	English Draft
" "	May, 1878	1625	Lochiel.	Clydesdale
" "	June, 1874	1775	Young Wallace.	"
" "	July, 1875	1845	Sir Wm. Wallace.	"
Crumpacker, Winter & Co., Westville, Ind	April, 1877	....	Arevoy.	Norman
" " "	May, 1878	....	What-You-Want.	"
" " "	April, 1879	..	Vidocq	"
" " "	June, 1879	...	Algerian.	"

Respectfully submitted,
D. E. BEATY,
Supt. Class B, Horses.

CLASS C—SHEEP.

REPORT OF E. B. DAVID, *Superintendent.*

To the State Board of Agriculture:

I have to report a good display in the sheep rings of the Fat Stock Show of 1881.

Ten individuals and firms representing three States and the Dominion of Canada were in attendance, with animals of all the breeds and types, in their purity and with their crosses and grades.

In the car-load lots, of which there were two, were to be seen some animals not so fat as desirable, though the average was fair, while in the other pens were some that would make a creditable record when guaged by the highest meat standard, and were a credit both to the men who bred and fed them and the breed to which they were indebted for their points of excellence.

The displays were pretty evenly divided between the mutton breeds, only eleven Fine Wool sheep being in the pens.

Of these latter, the ten wethers shown under the special offering of the Board, because above the age to which the listed offerings would apply, made quite an attractive feature of the show. The interest about the pens holding these sheep was divided between the ten fleeces (averaging in weight over eighteen pounds) sheared from the exhibited animals in the spring of 1881.

Inasmuch as Merino sheep do not mature at so early an age as the other breeds, I recommend that the offerings in some of the Fine Wool rings in future shows be regulated to admit Merino sheep without limit as to age, with the understanding that the age of such animals be accurately stated and taken into account in determining the judgment of the awarding committee.

Where such fleeces as those displayed at the Fat Stock Show can be yearly taken from sheep weighing 130 to 150 pounds, there will always be found men to contend that such animals offer a better return for the labor and cost of raising to maturity than is to be secured from those of the more commonly recognized mutton varieties.

I deem it of great public interest that all inquiries after facts be relieved of doubt on this point so far as the consistent action of the Board can assist them to available facts.

No sheep were slaughtered during the show. The entry books showed but one ring filled, and one of the parties to this declined to bring out his sheep when called upon to do so. This slaughtering test seems so essential in determining the merits of meat producing animals that some means should be employed for compelling the owners of a certain proportion of premium animals to submit them for such purpose.

If the premiums offered are not sufficiently large, they can be increased, or the owners of certain animals (to be designated in the premium list) may be required to turn such animals over to the Board at a value determined by competent and disinterested parties.

This feature of the Fat Stock Show is quite too important, and its lessons are too generally needed, for it to be allowed to remain as blank in future exhibitions, and I trust some means for an improvement over the show of 1881, in this particular, will be devised.

The 48 premiums awarded during the show were distributed, territorially, as follows 28 to Illinois; 1 to Kentucky; 4 to Michigan, 15 to Canada.

The decisions of awarding committees were very generally accepted courteously, even when not in accordance with the judgment and expectation of exhibiters and visitors.

I submit herewith a tabulated statement of entries, offerings and awards:

Lot.	Breed, etc.	2 and under 3 years	1 and under 2 years	Under 1 year	Total number entries	Amount premiums offered	Amount premiums paid
14	Long Wools, wethers	5	3	...	8	$75	$50
14	Long Wools, ewes	1	7	5	13	75	62
	Total	6	10	5	21	$150	$112
15	Middle Wools, wethers	7	7	2	16	75	70
15	Middle Wools, ewes	1	....	...	1	75	12
	Total	8	7	2	17	$150	$82
16	Fine Wools, wethers	..	...	...	..	75	.. ...
16	Fine Wools, ewes	...	...	..	...	75	... ...
	Total	..	...	...		$150	....

Entries, Offerings and Awards—Continued.

Lot	Breed, etc.	2 and under 3 years	1 and under 2 years	Under 1 year..	Total number entries	Amount premiums offered	Amount premiums paid....
17	Grades or Crosses, wethers	2	4	3	9	$75	$67
17	Grades or Crosses, ewes	1	4	6	11	75	62
	Total	3	8	9	20	$150	$129
18	Sweepstakes, wethers	10	9	5	24	75	75
18	Sweepstakes, ewes	3	6	8	17	75	75
	Total	13	15	13	41	$150	$150
19	Grand sweepstakes	...	...	...	14	30	30
20	Heaviest fat sheep	...	...	...	6	50	50
21	Car-loads, wethers	...	...	...	2	90	90
	Grand total	30	40	29	121	$920	$643

22	Dressed Sheep, wethers—Silver Medals offered	3
22	Dressed Sheep, ewes— " " "	3
	Total	6

Respectfully submitted,

E. B. DAVID,
Supt. Class C—Sheep.

CLASS D—SWINE.

REPORT OF DAVID GORE, *Superintendent.*

To the State Board of Agriculture:

The exhibit of Swine the past year was a great improvement over that of the previous year both in quality and number of animals exhibited.

The following table gives the number of entries, amount of premiums offered and paid in this department at the last Fat Stock Show:

Lot.......	Breed, etc.	1 and under 2 years.......	Under 1 year..	Total number entries	Amount premiums offered.	Amount premiums paid ...
23	Berkshire, barrows	1	..	1	$50	$12
23	Berkshire, sows	2	...	2	50	20
	Total	3	....	3	$100	$32
24	Poland China, barrows	3	...	3	50	25
24	Poland China, sows	1	2	3	50	32
	Total	4	2	6	$100	$57
25	Chester White, barrows	1	...	1	50	12
25	Chester White, sows	1	2	3	50	24
	Total	2	2	4	$100	$36

Entries, Premiums Offered and Awards—Continued.

Lot	Breed, etc.	1 year old and under 2	Under 1 year old	Total number entries	Amount premiums offered	Amount premiums paid
26	Essex, barrows		3	3	$50	$25
26	Essex, sows	2	3	5	50	45
	Total	2	6	8	$100	$70
27	Grades or Crosses, barrows	1	2	3	50	32
27	Grades or Crosses, sows	2	4	6	50	45
	Total	3	6	9	$100	$77
28	Sweepstakes, barrows	7	5	12	50	50
28	Sweepstakes, sows	7	7	14	50	50
	Total	14	12	26	$100	$100
29	Grand sweepstakes			17	50	50
30	Heaviest fat hog			11	50	50
31	Car loads, barrows				90	
	Grand total	28	28	84	$790	$472

Respectfully submitted,

DAVID GORE,
Supt Class D—Swine

CLASS E—POULTRY.

REPORT OF H D EMERY *Superintendent*

To the State Board of Agriculture

As Superintendent of Class F at the Chicago Fat Stock Show, I beg leave to report only a moderate show, but of excellent quality

The following table gives the amount of premiums offered and paid to this class as well as the number of entries

Lot	Breed, etc	Number of entries	Amount premiums offered	Amount premiums paid
32	Turkeys	7	$25	$14
33	Geese	13	25	23
34	Ducks	15	25	25
35	Asiatic Fowls	13	25	25
36	Fowls other than Asiatics	5	25	14
37	Dressed poultry	11	25	25
38	Displays, etc	3	38	30
	Total	67	$188	$156

Respectfully submitted,

H. D. EMERY,
Supt Class E—Poultry.

The special order being the consideration of the matter of holding a Show of Fat Stock in 1882, and coming up, Motion of Mr. Vittum carried,

That the Board proceed to make arrangements for holding a Show of Fat Stock early in November, 1882.

The following reports were considered and adopted:

CLASS A—CATTLE.

REPORT OF W. M. SMITH, *Superintendent.*

To the State Board of Agriculture:

I have the honor to recommend the same classification of premiums for Class A, Cattle, for the Fat Stock Show of 1882 as published in the premium list of 1881, with the necessary change to admit spayed heifers to competition in all rings with steers of similar ages and breeds; would further recommend the additional lot suggested in the annual address of the President, viz: a lot for the encouragement of the most economical production of beef, with the specification that all entries must be accompanied by a detailed and verified statement, giving cost of production from date of birth.

Premiums not to exceed $50 for each ring.

Respectfully submitted,

W. M. SMITH,

Supt. Class A—Cattle.

The motion of Mr. Cobb to amend was carried, requiring exhibiters to testify on oath as to the age of animals entered in the rings for early maturity.

Report, as amended, adopted.

CLASS B—HORSES.

REPORT OF D. E. BEATY, *Superintendent.*

To the State Board of Agriculture.

I would recommend that the same privileges be granted exhibiters of horses at the next Fat Stock Show, as published in the Fat Stock premium list for 1881.

Respectfully submitted,

D. E. BEATY,

Supt. Class B—Horses.

CLASS C—SHEEP.

REPORT OF E. B. DAVID, *Superintendent.*

To the State Board of Agriculture

It is recommended that fine-wool wethers and ewes two years old or over be hereafter admitted to competition in the lot for fine wool sheep at the Fat Stock Show; also, that slaughter tests be confined to wethers, the premium for dressed sheep to be $10.00 for each of the three ages.

The premium list and rules as published in the last premium list are recommended, with the changes noted above.

Respectfully submitted,

E. B. DAVID,

Supt. Class C—Sheep.

CLASS D—SWINE.

REPORT OF DAVID GORE, *Superintendent.*

To the State Board of Agriculture

I have the honor to recommend that the same classification of premiums and rules be adopted for the swine class at the Fat Stock Show of 1882 as published in the premium list for 1881, with a first, second and third premium of $20, $10 and $5, respectively.

I would further recommend that two premiums of $10 each be offered for dressed carcasses for barrow 1 and under 2 years of age and barrow under 1 year old, all pure breeds, crosses or grades of the ages named to be eligible.

Respectfully submitted,

DAVID GORE,
Supt Class D—Swine.

CLASS E—POULTRY.

REPORT OF H D EMERY, *Superintendent.*

To the State Board of Agriculture

I would recommend the same classification of premiums for the poultry class as offered at the last Fat Stock Show, with the same rules

Respectfully submitted,

H. D. EMERY,
Supt. Class E—Poultry

Motion of Mr. Haskell carried,

That the same provision be made for the exhibition of articles in Class F, Mechanics, as published in the Fat Stock premium list for 1881.

On motion of Mr. Dysart,

The same rules and regulations were adopted for the Fat Stock Show of 1882, as published in the premium list of 1881, with necessary changes in dates.

Motion of Mr. Vittum carried,

That the selection of committeemen to serve at the Fat Stock Show be deferred until the meeting of the Board during the week of the next State Fair.

Motion of Mr. Snoad carried,

That the Fat Stock Show of 1882 be opened to the public Thursday, November 16, 1882, and continue until the following Thursday night at 10 o'clock.

Motion of Mr. Gillham carried,

That the usual number of premium lists be printed of the State Fair and Fat Stock Show. Also, that the usual number of complimentary tickets for the Fair and Fat Stock Show be provided, and distributed as heretofore.

Mr. Cobb stated that he had been appointed by the Inter-State Agricultural Convention, composed of delegates of the State Board of Agriculture, to represent the Illinois State Board of Agriculture in a meeting of the convention to be held in the city of Washington in January, 1882, It being doubtful about his ability to attend, he had appointed Charles F. Mills, the Assistant Secretary of the Board, as his alternate.

Motion of Mr. Reynolds carried,

That the Board approve of the appointment of Mr. Mills, and that he be granted leave of absence to attend the meeting in Washington.

Motion of Mr. Vittum carried,

That Secretary Fisher be granted leave of absence to attend the series of agricultural conventions to be held in Washington in January, 1882.

Motion of Mr. Snoad carried,

That the actual traveling expenses of the trip to Washington, in attendance at the meetings, of the following gentlemen, be paid by the Treasurer of the Board, viz:

John P. Reynolds, D. B. Gillham, George S. Haskell, S. D. Fisher, and Charles F. Mills.

Motion of Mr. Cobb carried,

That committeemen be appointed for the Fair in the usual way, and that the Secretary be instructed to send to each member of the Board blanks showing the number and lot of each committeeman the several congressional districts are entitled to.

Motion of Mr. Cobb carried,

That the traveling expenses to and from Chicago, and the hotel expenses, while on duty, of judges selected to serve at the Fat Stock Show, be paid by the Board.

Mr. Reynolds, Secretary Inter-State Exposition Co., of Chicago, tendered the use of the Exposition Building for holding the next Fat Stock Show, upon the same terms for rent as heretofore, viz: ten per cent. of the gate receipts.

Motion of Mr. Dysart carried,

That the proposition of the Exposition Building Company be accepted, and that the President and Secretary of the Board be authorized to enter into contract for the use of the building on the terms proposed.

Motion of Mr. Gillham carried,

That the salary of the Curator of Museum, and Janitor, each be increased ten dollars per month from January 1, 1882.

The minutes of the morning, afternoon and evening sessions were read, and,

On motion of Mr. Dysart,

Adopted.

On motion of Mr. Judy,

The Board adjourned, subject to the call of the President.

Reports from County Agricultural Boards.

The financial reports of the County Agricultural Boards, and other societies in this State, holding Fairs in 1881, are presented herewith. The reports of the exhibitions in the various departments, and other matters usually published in connection with the reports, are tabulated, and follow the financial exhibits:

ADAMS COUNTY.

OFFICERS.—President, George W. Dean, Adams; Secretary, Richard Seaton, Camp Point; Treasurer, Moses C. Welsh, Camp Point.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$620 58
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness.		
" received in 1881, fees (gate and entrance)		4,800 70
" booth rents and permits		479 70
" received 1881, sale shares of stock		50 00
" received 1881, State appropriation		100 00
" received 1881, other sources		239 41
" paid 1881, in premiums	$2,550 00	
" paid 1881, for real estate, building and permanent imp'm'ts	745 08	
" paid 1881 for current expenses other than premiums	1,235 58	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	1,759 73	
" deficit (including debt covered by mortgage)		
Totals	$6,290 39	$6,290 39

BOONE COUNTY.

OFFICERS.—President, John Hannah, Belvidere; Secretary, A. E. Jenner, Belvidere; Treasurer, C. H. Peck, Belvidere.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$64 74
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		1,644 50
" booth rents and permits		216 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		40 00
" paid 1881, in premiums	$688 13	
" paid 1881, for real estate, buildings and permanent imp'm'ts	308 08	
" paid 1881, for current expenses other than premiums	1,119 31	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		50 28
Totals	$2,115 52	$2,115 52

BROWN COUNTY.

OFFICERS.—President, John J. McDonald, Mt. Sterling; Secretary, Geo. W. Curry, Mt. Sterling; Treasurer, S. D. Nokes, Mound Station.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$1,786 21	
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		$2,473 20
" booth rents and permits		312 00
" received 1881 sale shares of stock		50 10
" received 1881, State appropriation		100 00
" received 1881, other sources		609 00
" paid 1881, in premiums	1,979 50	
" paid 1881 for real estate, buildings and permanent imp'm'ts	100 00	
" paid 1881, for current expenses other than premiums	1,200 80	
" paid 1881, on previous year's indebtedness	264 00	
" remaining in treasury		
" deficit (including debt covered by mortgage)		1,786 21
Totals	$5,330 51	$5,330 51

BUREAU COUNTY.

OFFICERS.—President. Elijah Dee, Princeton; Secretary, C. P. Bascom, Princeton; Treasurer, H. M. Trimble, Princeton.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$4,120 10	
" of interest on previous indebtedness	361 10	
" received in 1881, fees (gate and entrance)		$3,661 35
" booth rents and permits		248 25
" received 1881, sale shares of stock		10 00
" received 1881, State appropriation		100 00
" received 1881, other sources		121 90
" paid 1881, in premiums	2,423 25	
" paid 1881, for real estate, buildings and permanent imp'm'ts	225 00	
" paid 1881, for current expenses other than premiums	838 28	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	13 77	
" deficit (including debt covered by mortgage)		3,840 00
Totals	$7,981 50	$7,981 50

CARROLL COUNTY.

OFFICERS.—President, Elijah Bailey, Mt. Carroll; Secretary, Don. R. Frazer, Mt. Carroll; Treasurer, Joseph S. Miles, Mt. Carroll.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$233 70
" deficit, last report (including debt covered by mortgage)	$1,467 50	
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		2,210 20
" booth rents and permits		292 24
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		
" paid 1881, in premiums	1,521 35	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	937 31	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	153 76	
" deficit (including debt covered by mortgage)		1,243 78
Totals	$4,079 92	$4,079 92

CASS COUNTY.

Officers.—President, C. W. Savage, Virginia; Secretary, R. W. Rabourn, Virginia; Treasurer, Geo. Conover, Virginia.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$16 97
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		1,311 95
" booth rents and permits		45 00
" received 1881, sale shares of stock		
" received 1881, State appropriations		100 00
" received 1881, other sources		374 16
" paid 1881, in premiums	$1,155 75	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	692 33	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		
Totals	$1,848 08	$1,848 08

CHAMPAIGN COUNTY.

Officers.—President, E. E. Chester, Champaign; Secretary, Albert Dunlap, Champaign; Treasurer, C. F. Columbia, Champaign.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$7,560 42	
" interest on previous indebtedness	520 18	
" received in 1881, fees (gate and entrance)		$1,965 65
" booth rents and permits		299 05
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		529 00
" paid 1881, in premiums	1,515 30	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	783 00	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		7,485 20
Totals	$10,378 90	$10,378 90

CLAY COUNTY.

Officers.—President, W. B. Wilson, Flora; Secretary, A. E. Shinn, Flora; Treasurer, Miss Dora Rider, Flora.

FINANCIAL EXHIBIT FOR 1881.

(No Fair held in 1881.)		
Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$16 00	
" interest on previous indebtedness	1 28	
" received in 1881, fees (gate and entrance)		
" booth rents and permits		
" received 1881, sale shares of stock		
" received 1881, State appropriation		
" received 1881, other sources		$45 00
" paid 1881, in premiums		
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	2 72	
" paid 1881, on previous indebtedness		
" remaining in treasury	25 00	
" deficit (including debt covered by mortgage)		
Totals	$45 00	$45 00

CUMBERLAND COUNTY.

Officers.—President, Wm. A. Berry, Johnstown; Secretary, Geo. Bruster, Majority Point; Treasurer, L. B. Ross, Majority Point.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit last report (including debt covered by mortgage)		
" interest on previous indebtedness	$100 00	
" received in 1881, fees (gate and entrance)		$508 65
" booth rents and permits		152 97
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		
" paid 1881, in premiums	303 20	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	103 87	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	254 55	
" deficit (including debt covered by mortgage)		
Totals	$761 62	$761 62

DeKALB COUNTY—Sycamore.

Officers.—President, Hiram Holcomb, Sycamore; Secretary, B. F. Wyman, Sycamore; Treasurer, A. W. Townsend, Sycamore.*

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$18 76
" deficit, last report (including debt covered by mortgage)	$100 00	
" interest on previous indebtedness	10 00	
" received in 1881, fees (gate and entrance)		955 00
" booth rents and permits		188 17
" received 1881, sale shares of stock		
" received 1881, State appropriation		33 33
" received 1881, other sources		70 00
" paid 1881, in premiums	624 50	
" paid 1881, for real estate, buildings and permanent imp'm'ts	26 40	
" paid 1881, for current expenses other than premiums	549 36	
" paid 1881, on previous year's indebtedness	100 00	
" remaining in treasury		
" deficit (including debt covered by mortgage)		145 00
Totals	$1,410 26	$1,410 26

DeKALB COUNTY—Sandwich.

Officers.—President, F. Baldwin, Sandwich; Secretary, J. M. Hummel, Sandwich; Treasurer, M. B. Castle, Sandwich.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$37 44
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		1,901 17
" booth rents and permits		237 29
" received 1881, sale shares of stock		
" received 1881, State appropriation		50 00
" received 1881, other sources		161 00
" paid 1881, in premiums	$1,002 98	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	974 32	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	409 60	
" deficit (including debt covered by mortgage)		
Totals	$2,386 90	$2,386 90

DeWITT COUNTY.

Officers.—President, Jas. A. Wilson, Clinton, Secretary, W. B. Rundle, Clinton, Treasurer, Edwin Weld, Clinton.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		$25 90
deficit last report (including debt covered by mortgage)	$925 00	
interest on previous indebtedness	92 50	
received in 1881 fees (gate and entrance)		1 543 00
booth rents and permits		598 40
received 1881 sale shares of stock		35 00
received 1881 State appropriation		100 00
received 1881 other sources		50 00
paid 1881 in premiums	1 093 50	
paid 1881 real estate buildings and permanent imp m ts	245 95	
paid 1881 for current expenses other than premiums	746 77	
paid on previous year s indebtedness	75 00	
remaining in treasury		23 58
deficit (including debt covered by mortgage)		850 00
Totals	$3 202 30	$3 202 30

DOUGLAS COUNTY.

Officers.—President, Isaac Cosler, Arcola, Secretary, Chas. G. Eckhart, Tuscola, Treasurer, W. R Johnson, Tuscola.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		$41 85
deficit last report (including debt covered by mortgage)		
interest on previous indebtedness		
received in 1881 fees (gate and entrance)		1 810 06
booth rents and permits		115 00
received 1881 sale shares of stock		
received 1881 State appropriation		100 00
received 1881 other sources		269 60
paid 1881 in premiums	$1 394 66	
paid 1881 for real estate buildings and permanent imp m ts	550 00	
paid 1881 for current expenses other than premiums	391 85	
paid 1881 on previous year s indebtedness		
remaining in treasury		
deficit (including debt covered by mortgage)		
Totals	$2 336 51	$2 336 51

DuPAGE COUNTY.

Officers.—President, W. R. Patrick, Lombard, Secretary, A. D. Kelley, Wheaton, Treasurer, Amos Churchill, Lombard.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		$7 83
deficit last report (including debt covered by mortgage)	$350 00	
interest on previous indebtedness	28 00	
received in 1881, fees (gate and entrance)		583 65
booth rents and permits		36 00
received 1881, sale shares of stock		27 00
received 1881, State appropriation ...		100 00
received 1881, other sources		146 62
paid 1881 in premiums	563 50	
paid 1881 for real estate buildings and permanent imp m ts		
paid 1881 for current expenses other than premiums	304 15	
paid 1881 on previous year s indebtedness		
remaining in treasury . .	5 45	
deficit (including debt covered by mortgage) .. .		350 00
Totals	$1 251 10	$1 251 10

EDGAR COUNTY.

OFFICERS.—President, W. O. Williams, Paris; Secretary, H. B. Adams, Paris; Treasurer, R. N. Parish, Paris.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$861 00
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		2,553 49
" booth rents and permits		276 00
" received in 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		403 00
" paid 1881, in premiums	$2,761 50	
" paid 1881, for real estate, buildings and permanent imp'm'ts	250 00	
" paid 1881, for current expenses other than premiums	225 00	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	956 99	
" deficit (including debt covered by mortgage)		
Totals	$4,193 49	$4,193 49

EDWARDS COUNTY.

OFFICERS.—President, John Curtis, Albion; Secretary, Morris Emmerson, Albion; Treasurer, Geo. Weaver, Albion.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$1,013 82
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		1,451 40
" booth rents and permits		125 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		188 25
" paid 1881, in premiums	$1,434 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	810 62	
" paid 1881, for current expenses other than premiums	267 95	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	365 90	
" deficit (including debt covered by mortgage)		
Totals	$2,878 47	$2,878 47

EFFINGHAM COUNTY.

OFFICERS.—President, E. H. Bishop, Effingham; Secretary, Owen Scott, Effingham; Treasurer, A. Gravenhorst, Effingham.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received 1881, fees (gate and entrance)		$455 57
" booth rents and permits		75 67
" received 1881, sale shares of stock		688 20
" received 1881, State appropriation		100 00
" received 1881, other sources		114 60
" paid 1881, in premiums	$1,147 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	205 89	
" received 1881, on previous year's indebtedness	81 15	
" remaining in treasury		
" deficit (including debt covered by mortgage)		
Totals	$1,434 04	$1,434 04

FAYETTE COUNTY.

Officers.—President, D. M. Clark, Vandalia; Secretary, L. Easterday, Vandalia; Treasurer, Simeon Perkins, Vandalia.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$8 85
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		453 35
" booth rents and permits		110 25
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		227 80
" paid 1881, in premiums	$429 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	453 45	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	17 80	
" deficit (including debt covered by mortgage)		
Totals	$900 25	$900 25

FORD COUNTY.

Officers.—President, Chas. Bogardus, Paxton; Secretary, Geo. A. Hall, Paxton; Treasurer, Geo. Grove, Paxton.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$45 97
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		1,930 46
" booth rents and permits		383 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		775 00
" paid 1881, in premiums	$1,786 90	
" paid 1881, for real estate, buildings and permanent imp'm'ts	212 06	
" paid 1881, for current expenses other than premiums	1,051 76	
" paid 1881, on previous year's indebtedness	149 50	
" remaining in treasury	34 21	
" deficit (including debt covered by mortgage)		
Totals	$3,234 43	$3,234 43

FRANKLIN COUNTY.

Officers.—President, P. S. Pope, Benton; Secretary, John W. Hill, Benton; Treasurer, A. D. Jackson, Benton.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$3 77
" deficit, last report (including debt covered by mortgage)	$35 00	
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		1,073 20
" booth rents and permits		
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		
" paid 1881, in premiums	832 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	100 00	
" paid 1881, for current expenses other than premiums	374 97	
" paid 1881, on previous year's indebtedness	35 00	
" remaining in treasury		
" deficit (including debt covered by mortgage)	200 00	
Totals	$1,376 97	$1,376 97

FULTON COUNTY—Canton.

OFFICERS.—President. J. B. Gardiner, Canton; Secretary, C. A. Emry, Canton; Treasurer, Inman Blackaby, Civer.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$6 10
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		2,017 00
" booth rents and permits		180 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		50 00
" received 1881, other sources		25 00
" paid 1881, in premiums	$910 80	
" paid 1881, for real estate, buildings and permanent imp'm'ts	446 15	
" paid 1881, for current expenses other than premiums	902 25	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	18 90	
" deficit (including debt covered by mortgage)		
Totals	$2,278 10	$2,278 10

FULTON COUNTY—Avon.

OFFICERS.—President, W. H. Rose, Avon; Secretary, H. F. Townsend, Avon; Treasurer, F. M. Nance, Avon

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$71 39
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		2,315 00
" booth rents and permits		329 25
" received 1881, sale shares of stock		
" received 1881, State appropriation		50 00
" received 1881, other sources		334 21
" paid 1881, in premiums	$1,857 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	75 00	
" paid 1881, for current expenses other than premiums	631 97	
" paid 1881, on previous year's indebtedness	102 00	
" remaining in treasury	433 88	
" deficit (including debt covered by mortgage)		
Totals	$3,099 85	$3,099 00

GALLATIN COUNTY.

OFFICERS.—President, M. M. Pool, Shawneetown; Secretary, John L. Robinson, Shawneetown; Treasurer, John D. Richeson, Shawneetown.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$640 00
" deficit, last report (including debt covered by mortgage)		
" interest on previous year's indebtedness		
" received in 1881, fees (gate and entrance)		2,286 65
" booth rents and permits		675 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		
" paid 1881, in premiums	$2,177 20	
" paid 1881, for real estate, buildings and permanent imp'm'ts	475 00	
" paid 1881, for current expenses other than premiums	888 00	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	161 45	
" deficit (including debt covered by mortgage)		
Totals	$3,701 65	$3,701 65

GREENE COUNTY.

Officers.—President, Henry Tunison, White Hall; Secretary, N. J. Andrews, Carrollton; Treasurer, L. S. Eldred, Carrollton.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury, last report		$192 63
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		2,794 30
" booth rents and permits		371 50
" received 1881, sale shares		
" received 1881, State appropriation		100 00
" received 1881, other sources		945 35
" paid 1881, in premiums	$1,993 25	
" paid 1881, for real estate, buildings and permanent imp'm'ts	100 00	
" paid 1881, for current expenses other than premiums	1,814 26	
" paid 1881, on previous year's indebtedness	61 31	
" remaining in treasury	434 96	
" deficit (including debt covered by mortgage)		
Totals	$4,403 78	$4,403 78

HAMILTON COUNTY.

Officers.—President, John J. Buck, McLeansboro; Secretary, G. B. Wheeler, McLeansboro; Treasurer, C. G. McCoy, McLeansboro.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$177 08
" deficit, last report (including debt covered by mortgage)	$2,440 00	
" interest on previous indebtedness	195 20	
" received in 1881, fees (gate and entrance)		1,509 10
" booth rents and permits		1,061 80
" received 1881, sale shares of stock.		
" received 1881, State appropriation		100 00
" received 1881, other sources		82 75
" paid 1881, in premiums.	1,305 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	268 51	
" paid 1881, on previous year's indebtedness	635 20	
" remaining in treasury	86 82	
" deficit (including debt covered by mortgage)		2,000 00
Totals	$4,930 73	$4,930 73

HANCOCK COUNTY.

Officers.—President, A. C. Hammond, Warsaw; Secretary, James T. Johnson, Warsaw; Treasurer, C. C. Hoppe, Warsaw.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		
" booth rents and permits		
" received 1881, sale shares and stock		$4,000 00
" received 1881, State appropriation		
" received 1881, other sources		300 00
" paid 1881, in premiums	$278 50	
" paid 1881, for real estate, buildings and permanent imp'm'ts	1,500 00	
" paid 1881, for current expenses other than premiums	21 50	
" paid 1881 on previous year's indebtedness		
" remaining in treasury	2,500 00	
" deficit (including debt covered by mortgage)		
Totals	$4,300 00	$4,300 00

HENDERSON COUNTY.

Officers.—President, H. M. Whiteman, Biggsville; Recording Secretary, R. A. McKinley, Biggsville; Corresponding Secretary, George W. Holmes, Biggsville; Treasurer, George McDill, Biggsville.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$377 74	
" interest on previous indebtedness	28 00	
" received in 1881, fees (gate and entrance)		$729 10
" booth rents and permits		154 90
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		127 75
" paid 1881, in premiums	617 40	
" paid 1881, for real estate, buildings and permanent imp'm'ts	75 00	
" paid 1881, for current expenses other than premiums	375 00	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		361 39
Totals	$1,473 14	$1,473 14

HENRY COUNTY.

Officers.—President, N. C. Gilbert, Geneseo; Secretary, R. H. Hinman, Cambridge; Treasurer, W. H. Shepard, Cambridge.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$6 92
" deficit, last report (including debt covered by mortgage)	$1,554 00	
" interest on previous indebtedness	117 80	
" received in 1881, fees (gate and entrance)		3,307 07
" booth rents and permits		793 45
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		166 49
" paid 1881, in premiums	2,908 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	395 86	
" paid 1881, for current expenses other than premiums	631 92	
" paid 1881, on previous year's indebtedness	152 20	
" remaining in treasury	15 95	
" deficit (including debt covered by mortgage)		1,401 80
Totals	$5,775 73	$5,775 73

IROQUOIS COUNTY.

Officers.—President, Daniel Fry, Watseka; Secretary, Robert Hayes, Watseka; Treasurer, John W. Riggs, Watseka.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		$2,000 00
" booth rents and permits		601 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		50 00
" received 1881, other sources		
" paid 1881, in premiums	$1,364 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	387 00	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	900 00	
" deficit (including debt covered by mortgage)		
Totals	$2,651 00	$2,651 00

JACKSON COUNTY—Murphysboro.

OFFICERS.—President, Philip Kimmel, Sr., DeSoto; Secretary, C. M. Bradley, Murphysboro; Treasurer, Jefferson Jenkins, Murphysboro.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$118 75
" deficit, last report (including debt covered by mortgage)	$500 00	
" interest on previous indebtedness	40 00	
" received in 1881, fees (gate and entrance)		1,181 29
" booth rents and permits		195 31
" received 1881, sale shares of stock		
" received 1881, State appropriation		
" received 1881, other sources		
" paid 1881, in premiums	968 95	
" paid 1881, for real estate, buildings and permanent imp'm'ts	561 86	
" paid 1881, for current expenses other than premiums	298 75	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		874 21
Totals	$2,369 56	$2,369 56

JACKSON COUNTY—Carbondale.

OFFICERS.—President, James M. Scurlock, Carbondale; Secretary, Sam. T. Brush, Carbondale; Treasurer, James M. Richart, Carbondale.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$420 82
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and intrance)		2,152 95
" booth rents and permits		221 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		
" received 1881, other sources		84 92
" paid 1881, in premiums	$1,472 75	
" paid 1881, for real estate, buildings and permanent imp'm'ts	454 23	
" paid 1881, for current expenses other than premiums	291 03	
" paid 1881, on previous year's indebtedness	486 00	
" remaining in treasury	175 68	
" deficit (including debt covered by mortgage)		
Totals	$2,879 69	$2,879 69

JASPER COUNTY.

OFFICERS.—President, James E. Freeman, Newton; Secretary, John P. Heap, Newton; Treasurer, William Johnson, Newton.

FINANCIAL EXHIBIT FOR 1881.

[No Fair held in 1881.]

Amount in treasury, last report		$221 26
" deficit, last report (including debt covered by mortgage		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		
" booth rents and permits		
" received 1881, sale shares of stock		35 00
" received 1881, State appropriation		100 00
" received 1881, other sources		24 00
" paid 1881, in premiums		
" paid 1881, for real estate, buildings and permanent imp'm'ts	$750 95	
" paid 1881, on previous year's indebtedness	187 31	
" paid 1881, for current expenses other than premiums		
" remaining in treasury		
" deficit (including debt covered by mortgage)		558 00
Totals	$938 26	$938 26

JERSEY COUNTY.

OFFICERS.—President, Wm. H. Fulkerson, Jerseyville; Secretary, Morris R. Locke, Jerseyville; Treasurer, John H. Shephard, Jerseyville.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$2,098 50
‘‘ deficit, last report (including debt covered by mortgage)		
‘‘ interest on previous indebtedness		
‘‘ received in 1881, fees (gate and entrance)		2,827 10
‘‘ booth rents and permits		866 00
‘‘ received 1881, sale shares of stock		
‘‘ received 1881, State appropriation		
‘‘ received 1881, other sources		912 90
‘‘ paid 1881, in premiums	$1,579 50	
‘‘ paid 1881, for real estate, buildings and permanent imp'm'ts	443 76	
‘‘ paid 1881, for current expenses other than premiums	3,244 97	
‘‘ paid 1881, on previous year's indebtedness		
‘‘ remaining in treasury		
‘‘ deficit (including debt covered by mortgage)		1,563 73
Totals	$8,268 23	$8,268 23

JoDAVIESS COUNTY—Galena.

OFFICERS.—President, George S. Avery, Galena; Secretary, Frank Bostwick, Galena; Treasurer, D. N. Corwith, Galena.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury, last report		
‘‘ deficit, last report (including debt covered by mortgage)		
‘‘ interest on previous indebtedness		
‘‘ received in 1881, fees (gate and entrance)		$1,502 25
‘‘ booth rents and permits		250 00
‘‘ received 1881, sale shares of stock		
‘‘ received 1881, State appropriation		50 00
‘‘ received 1881, other sources		25 00
‘‘ paid 1881, in premiums	$914 25	
‘‘ paid 1881, for real estate, buildings and permanent imp'm'ts	475 00	
‘‘ paid 1881, for current expenses other than premiums	282 00	
‘‘ paid 1881, on previous year's indebtedness	156 00	
‘‘ remaining in treasury		
‘‘ deficit (including debt covered by mortgage)		
Totals	$1,827 25	$1,827 25

JoDAVIESS COUNTY—Warren.

OFFICERS.—President, Robert Hawley, Warren; Secretary, W. L. Gale, Warren; Treasurer, James Bayne, Warren.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$26 15
‘‘ deficit, last report (including debt covered by mortgage)	$500 00	
‘‘ interest on previous indebtedness	40 00	
‘‘ received in 1881, fees (gate and entrance)		639 35
‘‘ booth rents and permits		156 75
‘‘ received 1881, sale shares of stock		
‘‘ received 1881, State appropriation		50 00
‘‘ received 1881, other sources		26 15
‘‘ paid 1881, in premiums	$636 00	
‘‘ paid 1881, for real estate, buildings and permanent imp'm'ts		
‘‘ paid 1881, for current expenses other than premiums	352 41	
‘‘ paid 1881, on previous year's indebtedness		
‘‘ remaining in treasury		
‘‘ deficit (including debt covered by mortgage)		630 01
Totals	$1,528 41	$1,528 41

KANE COUNTY—Aurora.

Officers.—President, H. H. Evans, Aurora, Secretary, W. S. Beaupre, Aurora; Treasurer, A. W. Stolp, Aurora.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		
deficit last report (including debt covered by mortgage)		
interest on previous indebtedness		
received in 1881 fees (gate and entrance)		$1 931 78
booth rents and permits		521 75
received 1881 sale shares of stock		
received 1881, State appropriation		100 00
received 1881 other sources		21 00
paid 1881 in premiums	$1 598 00	
paid 1881 for real estate buildings and permanent imp m ts		
paid 1881 for current expenses other than premiums	898 18	
paid 1881 on previous year s indebtedness		
remaining in treasury	78 35	
deficit (including debt covered by mortgage)		
Totals	$2 574 53	$2 574 53

KANKAKEE COUNTY

Officers—President, Milo Barnard, Manteno, Secretary, H S. Bloom, Kankakee, Treasurer, W. W Todd, Kankakee

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		
deficit last report (including debt covered by mortgage)		
interest on previous indebtedness		
received in 1881 fees (gate and entrance)		$1 687 80
booth rents and permits		103 35
received 1881 sale shares of stock		
received 1881 State appropriation		100 00
received 1881 other sources		1 670 00
paid 1881 in premiums	$1 199 50	
paid 1881 for real estate buildings and permanent imp m s		
paid 1881 for current expenses other than premiums	612 81	
paid 1881 on previous year s indebtedness	1 389 65	
remaining in treasury	359 19	
deficit (including debt covered by mortgage)		
Totals	$3 561 15	$3 561 15

KENDALL COUNTY.

Officers—President, A. Welch, Yorkville, Secretary, Wm. Hill, Yorkville, Treasurer, I. B. Chattel, Oswego.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		
deficit last report (including debt covered by mortgage)		
interest on previous indebtedness		
received in 1881 fees (gate and entrance)		$1 419 55
booth rents and permits		50 00
received 1881 sale shares of stock		
received 1881 State appropriation		100 00
received 1881 other sources		
paid 1881 in premiums	$885 00	
paid 1881 for real estate buildings and permanent imp m ts	250 00	
paid 1881 for current expenses other than premiums	434 55	
paid 1881 on previous year s indebtedness		
remaining in treasury		
deficit (including debt covered by mortgage)		
Totals	$1 569 55	$1 569 55

KNOX COUNTY.

OFFICERS.—President, J. V. N. Standish, Galesburg; Secretary, O. L. Campbell, Knoxville; Treasurer, J. B. Gault, Knoxville.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$170 00
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		1,496 70
" booth rents and permits		341 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		140 00
" paid 1881, in premiums	$1,553 48	
" paid 1881, for real estate, buildings and permanent imp'm'ts	100 00	
" paid 1881, for current expenses other than premiums	816 80	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		222 58
Totals	$2,470 28	$2,470 28

LAKE COUNTY—Libertyville.

OFFICERS.—President, W. H. Appley, Libertyville; Secretary, H. L. McCullough, Libertyville; Treasurer, J. W. Butler, Libertyville.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received 1881, fees (gate and entrance)		$392 70
" booth rents and permits		63 84
" received 1881, sale shares of stock		
" received 1881, State appropriation		50 00
" received 1881, other sources		14 09
" paid 1881, in premiums	$258 75	
" paid 1881, for real estate, buildings and permanent imp'm'ts	84 75	
" paid 1881, for current expenses other than premiums	150 37	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	26 76	
" deficit (including debt covered by mortgage)		
Totals	$520 63	$520 63

LAKE COUNTY—Waukegan.

OFFICERS.—President, John F. Powell, Waukegan; Secretary, Chas. A. Partridge, Waukegan; Treasurer, H. C. Hutchinson, Waukegan.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$857 62
" deficit, last report (including debt covered by mortgage)	$4,000 00	
" interest on previous indebtedness		
" received 1881 fees (gate and entrance)		2,263 75
" booth rents and permits		655 50
" received 1881, sale shares of stock		205 00
" received 1881, State appropriation		50 00
" received 1881, other sources		150 00
" paid 1881, in premiums	1,533 25	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	1,343 71	
" paid 1881, on previous year's indebtedness	1,000 00	
" remaining in treasury	304 91	
" deficit (including debt covered by mortgage)		4,000 00
Totals	$8,181 87	$8,181 87

*LASALLE COUNTY.

OFFICERS.—President, James H. Pickens, Ottawa; Secretary, A. M. Hoffman, Ottawa; Treasurer, L. H. Eams, Ottawa.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$51 27
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		
" booth rents and permits		
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		
" paid 1881, in premiums		
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	$134 59	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	16 68	
" deficit (including debt covered by mortgage)		
Totals	$151 27	$151 27

* No Fair held in 1881.

LIVINGSTON COUNTY—Fairbury.

OFFICERS.—President, R. C. Straight, Fairbury; Secretary, H. L. Bruce, Fairbury; Treasurer, L. B. Dominy, Fairbury.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury, last report		$197 80
" deficit, last report (including debt covered by mortgage)	$1,600 00	
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		2,738 45
" booth rents and permits		265 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		50 00
" received 1881, other sources		1,177 16
" paid 1881, in premiums	2,795 95	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	1,671 90	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		1,639 44
Totals	$6,067 85	$6,067 85

LOGAN COUNTY—Lincoln.

OFFICERS.—President, Joseph Ream, Lincoln; Secretary, W. H. Derby, Lincoln; Treasurer, H. L. Pierce, Lincoln.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$926 86	
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		$2,513 80
" booth rents and permits		594 60
" received 1881, sale shares of stock		
" received 1881, State appropriation		50 00
" received 1881, other sources		37 45
" paid 1881, in premiums	2,236 40	
" paid 1881, for real estate, buildings and permanent imp'm'ts	487 57	
" paid 1881, for current expenses other than premiums	1,483 03	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		1,938 01
Totals	$5,133 86	$5,133 86

LOGAN COUNTY—Atlanta.

Officers.—President, Frank Hoblit, Atlanta; Secretary, J. P. Hieronymus, Atlanta; Treasurer, Frank Hoblit, Atlanta.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$29 53
" deficit, last report (including debt covered by mortgage)	$1,700 00	
" interest on previous indebtedness	149 66	
" received in 1881, fees (gate and entrance)		1,737 50
" booth rents and permits		156 75
" received 1881, sale shares of stock		
" received 1881, State appropriation		50 00
" received 1881, other sources		462 35
" paid 1881, in premiums	1,061 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts.	159 82	
" paid 1881, for current expenses other than premiums	440 60	
" paid 1881, on previous year's indebtedness	300 00	
" remaining in treasury	25 05	
" deficit (including debt covered by mortgage)		1,400 00
Totals	$3,836 13	$3,836 13

MACON COUNTY.

Officers.—President, J. G. Willard, Harristown; Secretary, M. B. Thomas, Decatur; Treasurer, Jacob H. Miller, Decatur.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury, last report		$7 44
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		1,893 33
" booth rents and permits		240 25
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		125 00
" paid 1881, in premiums	$1,493 57	
" paid 1881, for real estate, buildings and permanent imp'm'ts	261 43	
" paid 1881, for current expenses other than premiums	558 27	
" paid 1881 on previous year's indebtedness	52 75	
" remaining in treasury		
" deficit (including debt covered by mortgage)		
Totals	$2,366 02	$2,366 02

MACOUPIN COUNTY.

Officers.—President, Joseph Bird, Carlinville; Secretary, F. W. Burton, Carlinville; Treasurer, Robert Bacon, Carlinville.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$1,237 83
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		2,545 85
" booth rents and permits		834 90
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		279 15
" paid 1881, in premiums	$2,455 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	346 84	
" paid 1881, for current expenses other than premiums	1,240 00	
" paid 1881, on previous year's indebtedness	139 75	
" remaining in treasury	816 14	
" deficit (including debt covered by mortgage)		
Totals	$4,997 73	$4,997 73

MARION COUNTY—Salem.

Officers.—President, A. Coffin, Alma; Secretary, L. O. Vogt, Salem; Treasurer, S. Phelps, Salem.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		$565 90
" booth rents and permits		149 25
" received 1881, sale shares of stock		500 00
" received 1881, State appropriation		
" received 1881, other sources		
" paid 1881, in premiums	$662 75	
" paid 1881, for real estate, buildings and permanent imp'm'ts	250 00	
" paid 1881, for current expenses other than premiums	100 00	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	202 40	
" deficit (including debt covered by mortgage)		
Totals	$1,215 15	$1,215 15

MASON COUNTY.

Officers.—President, W. S. Dray, Havana, Secretary, Sam. F. Kyle, Havana; Treasurer, Thos. Covington, Havana.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$32 82
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		633 68
" booth rents and permits		125 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		
" paid 1881, in premiums	$675 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	830 48	
" paid 1881, for current expenses other than premiums	386 02	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		1,000 00
Totals	$1,891 50	$1,891 50

MASSAC COUNTY.

Officers.—President, J. C. Willis, Metropolis; Secretary, J. M. Stone, Metropolis; Treasurer, A. D. Davis, Metropolis.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$661 96	
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		$547 80
" booth rents and permits		539 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		148 50
" paid 1881, in premiums	463 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	244 04	
" paid 1881, for current expenses other than premiums	364 80	
" paid 1881, on previous year's indebtedness	100 00	
" remaining in treasury	163 46	
" deficit (including debt covered by mortgage)		661 96
Totals	$1,997 26	$1,997 26

McDONOUGH COUNTY.

Officers.—President, C. V. Chandler, Macomb; Secretary, W. H. Hainline, Macomb; Treasurer, I. N. Pearson, Macomb.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$4,052 48	
" interest on previous indebtedness	324 20	
" received in 1881, fees (gate and entrance)		$410 20
" booth rents and permits		132 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		1,424 20
" paid 1881, in premiums	924 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	500 00	
" paid 1881, on previous year's indebtedness	324 00	
" remaining in treasury		
" deficit (including previous debt covered by mortgage)		4,058 28
Totals	$6,124 68	$6,124 68

McHENRY COUNTY—Woodstock.

Officers.—President, Thos. McD. Richards, Woodstock; Secretary, A. S. Wright, Woodstock; Treasurer, A. L. Salisbury, Woodstock.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$2,500 00	
" interest on previous indebtedness	195 00	
" received in 1881, fees (gate and entrance)		$2,206 75
" booth rents and permits		509 10
" received 1881, sale shares of stock		
" received 1881, State appropriation		
" received 1881, other sources		48 00
" paid 1881, in premiums	1,678 63	
" paid 1881, for real estate, buildings and permanent imp'm'ts	541 00	
" paid 1881, for current expenses other than premiums	911 12	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		3,061 90
Totals	$5,825 75	$5,825 75

McHENRY COUNTY—Marengo.

Officers.—President, L. W. Sheldon, Marengo; Secretary, J. S. Rogers, Marengo; Treasurer, S. K. Bartholomew, Marengo.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		$1,437 43
" booth rents and permits		133 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		
" received 1881, other sources		55 00
" paid 1881, in premiums	$1,027 75	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	597 68	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		
Totals	$1,625 43	$1,625 43

MERCER COUNTY.

Officers.—President, James Feather, Sunbeam; Secretary, C. F. Durston, Aledo; Treasurer, D. T. Hindman, Aledo.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$42 35
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		$2,800 39
" booth rents and permits		524 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		285 90
" paid 1881, in premiums	$2,037 40	
" paid 1881, for real estate, buildings and permanent imp'm'ts	170 93	
" paid 1881, for current expenses other than premiums	730 99	
" paid 1881, on previous year's indebtedness	371 40	
" remaining in treasury	441 92	
" deficit (including debt covered by mortgage)		
Totals	$3,752 64	$3,752 64

MONTGOMERY COUNTY.

Officers.—President, Moses Berrie, Butler; Secretary and Treasurer, Wm. K. Jackson, Hillsboro.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$37 65
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		658 25
" booth rents and permits		171 10
" received 1881, sale shares of stock		
" received 1881, State appropriation		
" received 1881, other sources		67 00
" paid 1881, in premiums	$328 40	
" paid 1881, for real estate, buildings and permanent imp'm'ts	75 00	
" paid 1881, for current expenses other than premiums	530 60	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		
Totals	$934 00	$934 00

MORGAN COUNTY.

Officers.—President, F. M. Morton, Jacksonville; Secretary, J. M. Dunlap, Jacksonville; Treasurer, Marcus Hook, Jacksonville.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$3,398 17	
" interest on previous indebtedness	248 00	
" received in 1881, fees (gate and entrance)		$5,858 90
" booth rents and permits		717 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		33 50
" paid 1881, in premiums	4,767 75	
" paid 1881, for real estate, buildings and permanent imp'm'ts	826 08	
" paid 1881, for current expenses other than premiums	1,770 82	
" paid 1881, on previous year's indebtedness	65 62	
" remaining in treasury		
" deficit (including debt covered by mortgage)		4,367 04
Totals	$11,076 44	$11,076 44

OGLE COUNTY—Oregon.

Officers.—President, George W.Hormell, Oregon; Secretary, Henry P. Lason, Oregon; Treasurer, John B. Seibert, Oregon.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$1,408 34	
" interest on previous indebtedness	105 70	
" received in 1881, fees (gate and entrance)		$2,597 88
" booth rents and permits		465 33
" received 1881, sale shares of stock		75 00
" received 1881, State appropriation		50 00
" received 1881, other sources		53 61
" paid 1881, in premiums	1,582 70	
" paid 1881, for real estate, buildings and permanent imp'm'ts	515 78	
" paid 1881, for current expenses other than premiums	619 30	
" paid 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		990 00
Totals	$4,231 82	$4,231 82

PERRY COUNTY.

Officers.—President, Wm. K. Murphy, Pinckneyville; Recording Secretary, R. G. Williams, Pinckneyville; Corresponding Secretary, J. J. Sargent, Pinckneyville; Treasurer, W. S. D. Smith, Pinckneyville.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$767 97
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		1,138 90
" booth rents and permits		310 25
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		33 20
" paid 1881, in premiums	$889 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	26 85	
" paid 1881, for current expenses other than premiums	471 35	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	963 12	
" deficit (including debt covered by mortgage)		
Totals	$2,350 32	$2,350 32

PIATT COUNTY.

Officers.—President, J. W. Warner, Monticello; Recording Secretary, H. D. Peters, Monticello; Corresponding Secretary, Theo. Gross, Monticello; Treasurer, H. V. Moore, Monticello.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$1,197 42
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		2,867 08
" booth rents and permits		985 50
" received 1881, sale shares of stock		2 50
" received 1881, State appropriation		100 00
" received 1881, other sources		167 78
" paid 1881, in premiums	$1,496 25	
" paid 1881, for real estate, buildings and permanent imp'm'ts	752 90	
" paid 1881, for current expenses other than premiums	907 11	
" paid 1881, on previous indebtedness		
" remaining in treasury	2,164 02	
" deficit (including debt covered by mortgage)		
Totals	$5,320 28	$5,320 28

PIKE COUNTY.

Officers.—President, Edward N. French, Milton; Secretary, J. H. Crane, Pittsfield; Treasurer, Wm. R. Wills, Pittsfield.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$75 76
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received 1881, fees (gate and entrance)		2,408 40
" booth rents and permits		599 25
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		
" paid 1881, in premiums	$1,686 50	
" paid 1881, for real estate, buildings and permanent imp'm'ts	835 15	
" paid 1881, for current expenses other than premiums	661 76	
" received 1881, on previous year's indebtedness		
" remaining in treasury		
" deficit (including debt covered by mortgage)		
Totals	$3,183 41	$3,183 41

POPE COUNTY.

Officers.—President, J. M. Boicourt, Golconda; Recording Secretary, James A. Rose, Golconda; Corresponding Secretary, J. E. Y. Hanna, Golconda; Treasurer, Wm. P. Sloan, Golconda.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$217 49
" deficit, last report (including debt covered by mortgage)	$900 00	
" interest on previous indebtedness	76 50	
" received in 1881, fees (gate and entrance)		1,068 00
" booth rents and permits		74 30
" received in 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		
" paid 1881, in premiums	644 50	
" paid 1881, for real estate, buildings and permanent imp'm'ts	224 95	
" paid 1881, for current expenses other than premiums	90 00	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	423 84	
" deficit (including debt covered by mortgage)		900 00
Totals	$2,359 79	$2,359 79

RANDOLPH COUNTY—Sparta.

Officers.—President, E. B. McGuire, Sparta; Secretary, John G. Taylor, Sparta; Treasurer, C. C. Hyndman, Sparta.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$1,239 92	
" interest on previous indebtedness	103 00	
" received in 1881, fees (gate and entrance)		$1,112 90
" booth rents and permits		301 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		
" received 1881, other sources		765 22
" paid 1881, in premiums	1,208 25	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	1,300 75	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	77 20	
" deficit (including debt covered by mortgage)		1,750 00
Totals	$3,929 12	$3,929 12

RANDOLPH COUNTY—Chester.

Officers.—President, Wm. A. Gordon, Chester; Secretary, Wm. Schuchert, Chester; Treasurer, Isaac Lehnherr, Chester.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$823 80
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		2,298 80
" booth rents and permits		656 40
" received 1881, sale shares of stock		
" received 1881, State appropriation		
" received 1881, other sources		2,500 00
" paid 1881, in premiums	$1,773 25	
" paid 1881, real estate, buildings and permanent imp'm'ts	3,310 00	
" paid 1881, for current expenses other than premiums	879 90	
" paid on previous year's indebtedness		
" remaining in treasury	315 85	
" deficit (including debt covered by mortgage)		
Totals	$6,279 00	$6,279 00

ROCK ISLAND COUNTY—Port Byron.

Officers.—President, A. F. Hollister, Port Byron; Secretary, L. S. Pearsall, Port Byron; Treasurer, Mark Ashdown, Port Byron.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		$590 00
" booth rents and permits		200 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		
" received 1881, other sources		278 50
" paid 1881, in premiums	$462 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	200 00	
" paid 1881, for current expenses other than premiums	368 25	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	38 25	
" deficit (including debt covered by mortgage)		
Totals	$1,068 50	$1,068 50

ROCK ISLAND COUNTY—Hillsdale.

Officers.—President, John A. Liphardt, Hillsdale; Secretary, G. W. Guernsey, Erie; Treasurer, E. P. Feaster, Hillsdale.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$40 45
" deficit, last report (including debt covered by mortgage)	$250 00	
" interest on previous indebtedness	20 00	
" received in 1881, fees (gate and entrance)		345 35
" booth rents and permits		186 35
" received 1881, sale shares of stock		
" received 1881, State appropriation		
" received 1881, other sources		606 50
" paid 1881, in premiums	344 50	
" paid 1881, for real estate, buildings and permanent imp'm'ts	91 90	
" paid 1881, for current expenses other than premiums	654 41	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	67 84	
" deficit (including debt covered by mortgage)		250 00
Totals	$1,428 65	$1,428 65

SALINE COUNTY—Harrisburg.

Officers.—President, W. E. Burnett, Harrisburg; Secretary, F. M. Pickett, Harrisburg; Treasurer, R. J. McGrath, Harrisburg.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		$1,384 45
" booth rents and permits		362 50
" received 1881, sale shares of stock		3,570 00
" received 1881, State appropriation		
" received 1881, other sources		1,430 00
" paid 1881, in premiums	$1,691 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	3,329 10	
" paid 1881, for current expenses other than premiums	296 85	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	1,430 00	
" deficit (including debt covered by mortgage)		
Totals	$6,746 95	$6,746 95

SALINE COUNTY—Eldorado.

Officers.—President, W. H. Pankey, Harrisburg; Secretary, S. T. Webber, Eldorado; Treasurer, W. L. Mitchell, Eldorado.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		$1,946 25
" booth rents and permits		399 75
" received 1881, sale shares of stock		3,520 40
" received 1881, State appropriation		
" received 1881, other sources		45 00
" paid 1881, in premiums	$2,185 50	
" paid 1881, for real estate, buildings and permanent imp'm'ts	6,139 10	
" paid 1881, for current expenses other than premiums	433 00	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	5 20	
" deficit (including debt covered by mortgage)		2,851 40
Totals	$8,762 80	$8,762 80

SANGAMON COUNTY.

Officers.—President, Geo. Pickrell, Wheatfield; Secretary, Phil. M. Springer, Springfield; Treasurer, G. A. VanDuyn, Springfield.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$50 00
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		2,472 05
" booth rents and permits		476 50
" received 1881, sale shares of stock		
" received 1881, State appropriation		
" received 1881, other sources		3,634 00
" paid 1881, in premiums	$4,759 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	255 09	
" paid 1881, for current expenses other than premiums	1,584 84	
" paid 1881, on previous year's indebtedness		
" remaining in treasury	33 62	
" deficit (including debt covered by mortgage)		
Totals	$6,632 55	$6,632 55

SCHUYLER COUNTY.

OFFICERS.—President, E M Anderson, Rushville, Recording Secretary, Mark Bogue, Rushville, Corresponding Secretary, S. B. Montgomery, Rushville, Treasurer, Simon Doyle, Rushville

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		
deficit last report (including debt covered by mortgage)	$588 19	
interest on previous indebtedness		
received in 1881 fees (gate and entrance)		$1 993 80
booth rents and permits		305 50
received 1881 sale shares of stock		
received 1881 State appropriation		100 00
received 1881 other sources		172 21
paid 1881 in premiums	1 650 70	
paid 1881 for real estate buildings and permanent imp m ts	154 84	
paid 1881 for current expenses other than premiums	384 39	
paid 1881 on previous year s indebtedness	250 86	
remaining in treasury		
deficit (including debt covered by mortgage)		457 47
Totals	$3 028 98	$3 028 98

SHELBY COUNTY.

OFFICERS.—President, James P Davis, Shelbyville, Secretary, G. A. Roberts, Shelbyville, Treasurer, W C Headen, Shelbyville

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		$293 17
deficit last report (including debt covered by mortgage)		
interest on previous indebtedness		
received in 1881 fees (gate and entrance)		1 634 98
booth rents and permits		176 25
received 1881 sale shares of stock		20 00
received 1881 State appropriation		100 00
received 1881 other sources		154 00
paid 1881 in premiums	$1 042 00	
paid 1881 for real estate buildings and permanent imp m ts	381 90	
paid 1881 for current expenses other than premiums	566 69	
paid 1881 on previous year s indebtedness		
remaining in treasury	387 81	
deficit (including debt covered by mortgage)		
Totals	$2 378 40	$2 378 40

STARK COUNTY—Toulon.

OFFICERS.—President Henry Colwell, Duncan, Secretary, Chas. Myers, Toulon, Treasurer, Samuel Burge, Toulon.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		$582 48
deficit last report (including debt covered by mortgage)		
interest on previous indebtedness		
received in 1881 fees (gate and entrance)		2 119 25
booth rents and permits		609 15
received 1881 sale shares of stock		
received 1881 State appropriation		100 00
received 1881 other sources		27 35
paid 1881 in premiums	$1 873 00	
paid 1881 for real estate buildings and permanent imp m ts	204 75	
paid 1881 for current expenses other than premiums	1 046 78	
paid 1881 on previous year s indebtedness		
remaining in treasury	313 70	
deficit (including debt covered by mortgage)		
Totals	$3 438 23	$3 438 23

TAZEWELL COUNTY

Officers—President, Ira B Hall, Delavan, Secretary, Geo. W. Patton, Delavan, Treasurer, R. Frey, Delavan.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		
deficit last report (including debt covered by mortgage	$628 11	
interest on previous indebtedness	96 00	
received in 1881 fees (gate and entrance)		$1 917 30
booth rents and permits		526 75
received 1881 sale shares of stock		689 00
received 1881 State appropriation		100 00
received 1881 other sources		25 00
paid 1881 in premiums	1 810 00	
paid 1881 for real estate buildings and permanent imp m ts	211 00	
paid 1881 for current expenses other than premiums	1 560 00	
paid 1881 on previous year s indebtedness		
remaining in treasury		
deficit (including debt covered by mortgage)		1 047 06
Totals	$4 305 11	$4 305 11

UNION COUNTY—Jonesboro

Officers—President, Josiah Bean, Anna, Secretary, J H Samson, Jonesboro, Treasurer, Chas Barringer, Jonesboro.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		
deficit last report including debt covered by mortgage)		
interest on previous indebtedness		
received in 1881 fees (gate and entrance)		$1 577 55
booth rents and permits		350 94
received 1881 sale shares of stock		
received 1881 State appropriation		100 00
received 1881 other sources		94 00
paid 1881 in premiums	$1 413 50	
paid 1881 for real estate building and permanent imp m ts	42 90	
paid 1881 for current expenses other than premiums	619 03	
paid 1881 on previous year s indebtedness	25 06	
remaining in treasury	22 00	
deficit (including debt covered by mortgage)		
Totals	$2 122 49	$2 122 49

VERMILION COUNTY—Catlin

Officers—President, J H Oakwood, Catlin, Secretary, G W F. Church, Catlin, Treasurer, Arthur Jones, Catlin

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		
deficit last report (including debt covered by mortgage)	$550 92	
interest on previous indebtedness		
received in 1881 fees (gate and entrance)		$842 00
booth rents and permits		293 20
received 1881 sale shares of stock		
received 1881 State appropriation (1879 and 1880)		66 68
received 1881 other sources		294 03
paid 1881 in premiums	985 75	
paid 1881 for real estate buildings and permanent imp m ts	54 25	
paid 1881 for current expenses other than premiums	821 65	
paid 1881 on previous year s indebtedness		
remaining in treasury	39 26	
deficit (including debt covered by mortgage)		955 92
Totals	$2 451 83	$2 451 83

VERMILION COUNTY—Hoopeston.

Officers.—President, J. A. Cunningham, Hoopeston; Secretary, Dale Wallace, Hoopeston; Treasurer, A. H. Trego, Hoopeston.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$230 17	
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		$2,401 79
" booth rents and permits		952 00
" received 1881, sale shares of stock		
" received 1881, State appropriation (1879 and 1880.)		66 66
" received 1881, other sources		40 00
" paid 1881, in premiums	1,988 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	355 21	
" paid 1881, for current expenses other than premiums	754 42	
" paid 1881, on previous year's indebtedness	162 50	
" remaining in treasury	338 52	
" deficit (including debt covered by mortgage)		368 37
Totals	$3,828 82	$3,828 82

WARREN COUNTY.

Officers.—President, R. S. Patton, Monmouth; Secretary, Geo. E. Rankin, Monmouth; Treasurer, W. A. Rice, Monmouth.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$8,000 00	
" interest on previous indebtedness		
" received in 1881, fees (gate and intrance)		$3,713 05
" booth rents and permits		406 00
" received 1881, sale shares of stock.		
" received 1881, State appropriation		
" received 1881, other sources		8,091 50
" paid 1881, in premiums.	2,311 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts	1,536 44	
" paid 1881, for current expenses other than premiums.	1,191 09	
" paid 1881, on previous year's indebtedness.		
" remaining in treasury.		
" deficit (including debt covered by mortgage)		827 98
Totals	$13,038 53	$13,038 53

WHITE COUNTY.

Officers.—President, James R. Williams, Carmi; Secretary, Rich-L. Organ, Carmi; Treasurer, James I. McClintock, Carmi.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$1,659 85	
" interest on previous indebtedness	100 00	
" received in 1881, fees (gate and entrance)		$3,300 00
" booth rents and permits.		900 00
" received 1881, sale shares of stock		
" received 1881, State appropriation		100 00
" received 1881, other sources		199 75
" paid 1881, in premiums	2,802 50	
" paid 1881, for real estate, buildings and permanent imp'm'ts	300 00	
" paid 1881, on previous year's indebtedness		
" paid 1881, for current expenses other than premiums	1,100 00	
" remaining in treasury.		
" deficit (including debt covered by mortgage)		1,462 60
Totals	$5,962 35	$5,962 35

WHITESIDE COUNTY—Sterling.

Officers.—President, R. B. Witmer, Sterling; Secretary, W. F. Eastman, Sterling; Treasurer, J. W. Alexander, Sterling.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)		
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		$4,345 45
" booth rents and permits		566 31
" received 1881, sale shares of stock		
" received 1881, State appropriation		50 00
" received 1881, other sources		103 25
" paid 1881, in premiums	$951 51	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	3,959 67	
" paid 1881, on previous year's indebtedness	353 19	
" remaining in treasury		
" deficit (including debt covered by mortgage)		199 36
Totals	$5,264 37	$5,264 37

WHITESIDE COUNTY—Morrison.

Officers.—President, Robert E. Logan, Morrison; Secretary, Ed. J. Congar, Morrison; Treasurer, A. C. McAllister, Morrison.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		
" deficit, last report (including debt covered by mortgage)	$578 03	
" interest on previous indebtedness	63 30	
" received in 1881, fees (gate and entrance)		$2,417 85
" booth rents and permits		470 25
" received 1881, sale shares of stock		
" received 1881, State appropriation		50 00
" received 1881, other sources		1,193 01
" paid 1881, in premiums	1,832 50	
" paid 1881, for real estate, buildings and permanent imp'm'ts	391 23	
" paid 1881, for current expenses other than premiums	1,422 79	
" paid 1881, on previous year's indebtedness	706 19	
" remaining in treasury		
" deficit (including debt covered by mortgage)		862 93
Totals	$4,994 04	$4,994 04

WHITESIDE COUNTY—Albany.

Officers.—President, E. H. Nevitt, Albany; Secretary, J. F. Happer, Albany; Treasurer, E. Olds, Albany.

FINANCIAL EXHIBIT FOR 1881.

Amount in treasury, last report		$10 34
" deficit, last report (including debt covered by mortgage)	$355 20	
" interest on previous indebtedness		
" received in 1881, fees (gate and entrance)		548 95
" booth rents and permits		635 10
" received 1881, sale shares of stock		
" received 1881, State appropriation		
" received 1881, other sources		
" paid 1881, in premiums	460 00	
" paid 1881, for real estate, buildings and permanent imp'm'ts		
" paid 1881, for current expenses other than premiums	551 11	
" paid 1881, on previous year's indebtedness	180 20	
" remaining in treasury	3 08	
" deficit (including debt covered by mortgage)		355 20
Totals	$1,549 59	$1,549 59

WILLIAMSON COUNTY

OFFICERS.—President, A. N. Lodge, Marion; Secretary, L. A. Goddard, Marion; Treasurer, Chas. M. Kern, Marion.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		$34 17
deficit last report (including debt covered by mortgage)		
interest on previous indebtedness		
received in 1881 fees (gate and entrance)		1 418 85
booth rents and permits		184 00
received 1881 sale shares of stock		
received 1881 State appropriation		100 00
received 1881 other sources		50 75
paid 1881 in premiums	$1 240 00	
paid 1881 for real estate buildings and permanent imp'm'ts	50 00	
paid 1881 for current expenses other than premiums	408 45	
paid 1881 on previous year's indebtedness		
remaining in treasury	89 32	
deficit (including debt covered by mortgage)		
Totals	$1 787 77	$1 787 77

WINNEBAGO COUNTY

OFFICERS.—President, John C. Chappell, Rockford; Secretary, Henry P. Kimball, Rockford; Treasurer, Horace Brown, Rockford.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		$1 535 60
deficit last report including debt covered by mortgage)	$7 650 00	
interest on previous indebtedness	715 50	
received in 1881 fees (gate and entrance)		3 409 65
booth rents and permits		
received 1881 sale shares of stock		
received 1881 State appropriation		100 00
received 1881 other sources		741 85
paid 1881 in premiums	1 899 05	
paid 1881 for real estate buildings and permanent imp'm'ts		
paid 1881 for current expenses other than premiums	3 485 17	
paid 1881 on previous year's indebtedness	715 50	
remaining in treasury		
deficit (including previous debt covered by mortgage)		8 678 12
Totals	$14 465 22	$14 465 22

WOODFORD COUNTY

OFFICERS.—President, Edward Hodgson, El Paso; Secretary, D. A. Espy, El Paso; Treasurer, F. T. Waite, El Paso.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		$36 11
deficit last report (including debt covered by mortgage)	$1 853 00	
interest on previous indebtedness	138 96	
received in 1881 fees (gate and entrance)		1 968 35
booth rents and permits		269 25
received 1881 sale shares of stock		2 275 00
received 1881 State appropriation		100 00
received 1881 other sources		379 16
paid 1881 in premiums	2 327 65	
paid 1881 for real estate buildings and permanent imp'm'ts	700 00	
paid 1881 for current expenses other than premiums	865 76	
paid 1881 on previous year's indebtedness	1 050 00	
remaining in treasury	271 04	
deficit (including debt covered by mortgage)		2 178 54
Totals	$7 206 41	$7 206 41

ILLINOIS STATE FAIR

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		
deficit last report (including debt covered by mortgage)	$266 82	
received in 1881 fees gate and entrance)		$19 387 50
booth rents and permits		3 273 39
received 1881 State appropriation		3 000 00
received 1881 other sources		
paid 1881 in premiums	15 563 32	
paid 1881 for real estate buildings and permanent improvements		
paid 1881 for current expenses other than premium	10 563 94	
remaining in treasury		
deficit (including debt covered by mortgage		33 19
Totals	$26 394 08	$26 394 08

FAT STOCK SHOW.

FINANCIAL EXHIBIT FOR 1881

Amount in treasury last report		
deficit last report (including debt covered by mortgage)	$2 891 23	
received in 1881 fees (gate and entrance)		$2 967 75
received in 1881 subscriptions		4 085 00
received 1881 other sources		
paid 1881 in premiums	3 323 00	
paid 1881 for current expenses other than premiums	3 747 78	
remaining in treasury		
deficit (including debt covered by mortgage)		2 909 26
Totals	$9 962 01	$9 962 01

ILLINOIS STATE FAIR.

REPORT OF EXHIBITION FOR 1881.

Departments.	Number of entries in each department......	Amount of premiums offered to each departm'nt	Amount of premiums paid to each department......
A—Cattle	472	$4,220 00	$4,015 00
B—Horses and Equestrianism	611	3,271 00	2,956 00
B—Mules and Asses	17	475 00	185 00
C—Sheep	348	1,290 00	1,260 00
D—Hogs	429	1,475 00	1,465 00
E—Poultry	205	812 00	398 00
F—Mechanic Arts—Light machines, agricultural implements, stoves, castings, worked metals, household furniture, manufactures of various kinds, engines, machinery, etc., vehicles, sewing and knitting machines, etc	744	170 00	160 00
G—Farm Products—Grain, seeds, vegetables, butter, cheese, cakes, etc	361	759 00	552 00
H—Horticulture and Floriculture—Trees, fruits, flowers, plants, canned and preserved fruits, jellies, pickles, etc	363	1,286 00	974 00
I—Fine Arts—Musical instruments, sculpture, painting, drawing, wax, feathers, hair work, etc	186	91 00	56 00
K—Textile Fabrics—Mill fabrics, household fabrics, needle work	842	587 00	541 00
L—Natural History—Botany, minerology, conchology, entomology, ichthyology, herpetology	14	335 00	265 00
N—Education	368	330 50	316 50
Speed Ring	31	1,100 00	1,590 00
For Silver Medals, etc	....	....	829 82
Totals	4,991	$16,201 50	$15,563 32

FAT STOCK SHOW.

REPORT OF EXHIBITION FOR 1881.

Departments.	Number of entries in each department...... ...	Amount of premiums offered to each departm'nt	Amount of premiums paid to each department......
A—Cattle	255	$2,775 00	$2,040 00
B—Horses	13	.. ..	....
C—Sheep	121	920 00	643 00
D—Hogs	84	790 00	472 00
E—Poultry	65	188 00	156 00
Premiums of previous year	.. ..	.. ..	12 00
Totals	538	$4,673 00	$3,323 00

S. D. FISHER,
Secretary.

JAS. R. SCOTT
President State Board of Agriculture.

ILLINOIS AGRICULTURAL FAIRS—1881.

Number of Entries, Amount of Premiums Offered, and Amount of Premiums Paid by each Association.

LIVE STOCK EXHIBIT

Counties	Location of Fair	CATTLE			HORSES AND EQUESTRIANISM			MULES AND ASSES			SHEEP			HOGS		
		Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums paid	Amount of premiums paid
Adams	Camp Point	55	$651 00	$298 00	453	$507 00	$505 00	28	$49 00	$71 00	87	$195 00	$180 00	140	$286 00	$273 00
Alexander																
Bond																
Boone	Belvidere	40	326 00	68 25	60	228 00	84 75		10 00		25	72 00	26 25	32	152 00	30 75
Brown	Mt Sterling	26	192 50	138 50	210	616 00	451 00	22	78 00	70 50	24	146 00	70 00	148	247 00	232 00
Bureau	Princeton	60	573 00	367 00	108	627 00	421 00	3	27 00	17 00	61	240 00	172 00	75	365 00	197 00
Calhoun																
Carroll	Mt Carroll	78	373 25	157 00	116	353 25	254 75	3	17 50	7 00	34	79 50	51 00	29	162 00	78 25
Cass	Virginia	10	184 50	104 00	151	505 00	418 00		44 00	28 00				12	136 50	21 00
Champaign	Champaign	11	308 00	157 00	108	399 00	237 00	7	43 00	18 00	30	87 00	48 00	76	105 00	78 00
Christian																
Clark																
Clay																
Clinton																
Coles	Charleston	41	574 00	294 00	196	481 00	440 50	5	55 00	32 50	17	85 50	51 00	37	166 00	128 00
Cook																
Crawford																
Cumberland	Majority Point	26	139 00	55 60	94	230 00	92 00	2	9 00	3 60	2	7 00	2 80	25	41 00	16 10
DeKalb	Sandwich	11	176 00	17 00	28	190 50	183 00		21 50		48	48 00	32 00	18	48 00	15 00
DeKalb	Sycamore	41	573 00	152 00	128	208 00	209 00	2	18 00	8 00	18	90 00	45 00	66	78 00	54 00
DeWitt	Clinton	21	238 00	57 00	204	264 00	241 00	15	39 00	39 00	22	63 00	39 50	29	96 00	39 00
Douglas	Tuscola		191 00		118	335 00	204 25	12	66 00	26 39	1	26 00		39	106 00	46 75
DuPage	Wheaton	21	146 00	65 00	37	207 00	116 00				19	66 00	47 00	8	60 00	32 00
Edgar	Paris	49	517 00	592 00	179	804 00	755 00	16	58 00	54 00	9	45 00	45 00	32	162 00	139 00
Edwards	Albion	48	204 00	157 50	145	484 00	442 00	12	41 00	35 00	29	107 00	58 50	50	175 00	130 50
Effingham	Effingham	26	279 00	112 00	48	401 00	173 00	2	46 00	6 00	4	117 00	66 00	38	258 00	196 00
Fayette	Vandalia	54	247 00	72 50	90	177 00	77 00	1	43 50	1 00	41	138 00	33 00	45	92 00	20 00

Illinois Agricultural Fairs, 1881.—Continued

ounties	Location of Fair	CATTLE			HORSES AND EQUESTRIANISM			MULES AND ASSES			SHEEP			HOGS		
		Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid
Ford	Paxton	81	$594 00	$513 50	111	$490 00	$303 50	3	$23 00	$10 00	24	$36 00	$34 00	85	$217 00	$152 00
Franklin	Benton	10	132 50	24 50	82	415 50	320 00	11	152 00	140 00	3	26 00	11 00	6	35 00	18 00
Fulton	Canton	44	594 00	85 20	149	571 00	198 80	7	83 00	20 80	63	124 00	68 40	61	289 00	49 20
Fulton	Avon	93	535 00	261 00	197	407 00	280 00				35	88 00	68 00	70	217 00	150 00
Gallatin	Shawneetown	37	268 00	227 50	116	783 00	520 00	1	82 00	70 50	6	58 00	19 50	11	194 00	45 00
Greene	Carrollton	27	360 00	133 00	215	618 00	507 00	18	60 00	50 00	39	76 00	70 00	39	155 00	125 00
Grundy																
Hamilton	McLeansboro	29	219 00	148 00	125	442 00	328 00	8	45 00	15 00	29	70 00	53 00	27	100 00	60 00
Hancock	Warsaw	38	26 00	26 00	63	78 00	78 00	17	20 00	26 00	7	6 00	6 00	24	19 00	19 00
Hardin																
Henderson	Biggsville	27	326 00	92 40	125	485 00	202 50	9	29 00	12 00	11	47 50	21 00	58	110 00	59 40
Henry	Cambridge	46	501 00	259 00	53	435 00	289 00				26	105 00	83 00	36	192 00	124 00
Iroquois	Watseka	17	267 00	50 00	119	406 00	298 00	9	40 00	21 00	23	60 00	43 00	67	98 00	73 00
Jackson	Murphysboro	16	143 00	55 00	59	326 00	167 50	5	133 00	17 00	12	40 50	35 00	4	65 00	8 50
Jackson	Carbondale	61	878 00	279 00	67	322 00	281 50	20	109 00	33 00	34	240 00	62 00	26	235 00	70 00
Jasper																
Jefferson																
Jersey	Jerseyville	30	545 00	370 00	326	1 173 00	1 008 00	19	90 00	75 00	57	198 00	183 00	59	261 00	243 00
JoDaviess	Galena	47	158 00	131 00	56	200 00	152 00	4	20 00	15 00	17	48 00	26 00	14	114 00	72 25
JoDaviess	Warren	38	165 50	109 00	55	133 50	102 00				6	24 00	20 00	9	34 50	27 50
Johnson																
Kane	Aurora	113	670 00	243 00	71	375 00	148 00	3	35 00	14 00	28	108 00	69 00	31	222 00	81 00
Kankakee	Kankakee	149	284 00	162 00	133	384 00	266 00	2	12 00	12 00	27	102 00	71 00	34	140 00	64 00
Kendall	Bristol	21	174 20	44 00	40	148 00	71 00		24 50		13	23 50	45 00	25	108 00	48 00
Knox	Knoxville	20	479 00	1[illegible]0 00	250	531 00	310 00	20	78 00	50 00	140	123 00	75 00	101	216 00	86 00
Lake	Libertyville	86	333 00	54 30	45	194 00	26 40		17 00		26	67 00	22 80	33	45 00	18 60
Lake	Waukegan	82	782 50	182 00	69	390 00	213 00				57	216 00	165 50	20	225 00	61 00
LaSalle																
Lawrence																
Lee																
Livingston	Fairbury	149	1 132 00	921 00	174	790 00	471 00	5	47 00	17 00	30	162 00	82 00	49	161 00	110 00
Logan	Lincoln	60	618 00	190 50	293	780 00	341 00	10	64 00	21 50	70	122 00	58 50	58	236 00	83 00
Logan	Atlanta	41	504 00	159 00	196	456 50	353 50	9	41 50	32 50	29	72 00	60 00	34	126 00	85 00
Macon	Decatur	52	558 00	183 33	113	586 00	310 00				25	144 00	55 33	82	416 00	189 66

Macoupin	Carlinville	10	237 00	139 00	257	647 00	556 00	10	60 00	40 00	48	168 00	154 00	83	184 00	181 00
Madison																
Marion	Salem		185 50	79 00		572 60	456 00								125 50	68 00
Marshall																
Mason	Havana	4	276 00	17 00	76	361 00	175 00	12	98 00	40 00	1	99 00	5 00	10	156 00	52 00
Massac	Metropolis	7	50 00	30 00	33	164 00	104 00	8	50 00	30 00	2	5 00	5 00	3	25 00	5 00
McDonough	Macomb	21	359 00	80 00	111	288 00	209 00	4	57 00	14 00	32	64 00	49 00	41	232 00	147 00
McHenry	Woodstock	96	175 00	175 00	112	200 00	200 00	3	9 00	9 00	43	114 00	114 00	24	36 00	36 00
McHenry	Marengo	71	314 00	129 00	106	200 00	130 00				32	74 00	41 00	31	138 00	48 00
McLean																
Menard																
Mercer	Aledo	50	384 00	248 00	190	635 00	505 00	6	47 00	20 00	53	123 00	114 00	95	245 00	222 00
Monroe																
Montgomery	Hillsboro	2	197 75	14 00	75	300 00	98 00	5	56 00	27 00	1	70 00	2 40	4	82 00	18 00
Morgan	Jacksonville	34	426 25	377 50	198	710 50	519 50	26	85 50	85 50	96	261 00	201 00	97	466 00	407 50
Moultrie																
Ogle	Oregon	20	377 50	75 00	110	309 00	182 50	1	18 50	3 00	20	81 00	43 00	13	69 00	19 00
Ogle																
Peoria	State Fair															
Perry	Pinckneyville	19	123 00	61 00	40	428 00	173 50	3	63 00	16 00		30 00		6	[illegible]	13 00
Piatt.	Monticello	15	290 50	150 00	102	355 00	293 50	5	27 50	15 00		63 00		18	70 00	65 00
Pike	Pittsfield	19	291 00	208 00	109	420 00	300 00	24	78 00	78 00	16	124 00	76 00	12	198 00	43 00
Pope	Golconda	20	67 00	60 00	44	168 00	132 00	26	77 00	58 00	20	55 00	53 00	12	49 00	45 00
Pulaski																
Putnam																
Randolph	Sparta	36	373 00	179 00	146	1 064 00	614 75				31	122 50	66 00	20	270 00	62 00
Randolph	Chester	24	307 00	174 00	45	415 00	242 00	4	104 00	29 00	5	94 00	26 00	4	136 00	37 00
Richland																
Rock Island	Port Byron	15	100 00	30 00	51	125 00	90 00				4	12 00	8 00	21	116 00	41 00
Rock Island	Hillsdale	18	58 65	24 50	42	158 00	112 00	2	13 25	3 00	10	15 75	18 00	22	101 75	34 25
Saline	Harrisburg	53	263 50	159 50	88	381 00	[illegible]	23	180 50	93 50	31	65 00	31 00	22	112 00	46 00
Saline	El Dorado	39	340 00	261 00	115	[illegible]	431 00	16	55 00	50 00	22	64 00	60 00	28	176 00	92 00
Sangamon	Springfield	69	1 535 00	595 00	275	1 134 00	833 00	16	120 00	80 00	41	249 00	154 00	104	435 00	385 00
Schuyler	Rushville	34	257 00	186 50	168	557 00	388 00	5	37 00	17 50	58	95 50	76 00	38	132 00	109 00
Scott																
Shelby	Shelbyville	30	242 00	222 00	2	127 00	18 00	4	58 00	24 00	38	84 00	80 00	17	85 00	40 00
Stark	Toulon	77	362 00	312 00	137	600 00	589 00	10	70 00	40 00	49	177 00	114 00	98	210 00	176 00
St Clair																
Stephenson																
Tazewell	Delavan	83	514 00	287 00	312	642 00	527 00	7	64 00	19 00	27	105 00	53 00	125	335 00	240 00
Union	Jonesboro	60	298 50	179 00	88	[illegible] 00	339 50	38	153 00	96 50	33	85 50	71 50	21	102 00	9 00
Vermilion	Catlin	21	244 00	119 00	176	701 00	448 00	12	37 00	18 00	34	84 00	72 00	18	110 00	80 00
Vermilion																
Vermilion	Hoopeston	85	630 00	480 00	271	418 00	350 00	18	47 00	28 00	64	68 00	61 00	102	194 00	133 00
Wabash																
Warren	Monmouth	23	229 50	130 00	168	907 00	764 00	1	30 00	6 00	19	108 00	81 00	60	[illegible]	195 00
Washington																
Wayne																
White	Carmi	44	1 044 00	245 00	125	550 00	370 00	14	55 00	48 00	35	188 00	66 00	16	218 00	43 00
Whiteside	Sterling	52	360 00	149 00	77	246 00	138 50		16 00		10	115 00	29 00	44	106 00	81 00
Whiteside	Morrison	80	445 00	233 00	113	229 00	180 00	2	19 00	5 00	57	95 00	74 00	71	148 00	127 00
Whiteside	Albany	19	184 00	63 00	48	87 00	55 00	1	4 00	2 00	2	18 00	3 00	20	60 00	30 00

Illinois Agricultural Fairs, 1881.—Continued.

Counties	Location of Fair	CATTLE			HORSES AND EQUESTRIANISM			MULES AND ASSES			SHEEP			HOGS		
		Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid
Will																
Williamson	Marion	36	$264 00	$140 00	89	$390 00	$276 00	26	$116 00	$92 00	39	$48 00	$41 0	22	$82 00	$63 00
Winnebago	Rockford	65	474 00	276 00	140	331 00	260 00	5	11 00	5 00	83	95 00	83 00	41	159 00	81 00
Woodford	El Paso	120	839 00	504 05	151	687 00	595 05	4	45 00	18 00	21	119 00	53 00	26	180 00	46 00
State Fair	Peoria	472	4 220 00	4 015 00	611	3 271 00	2 956 00	17	475 00	185 00	348	1 290 00	1 260 00	429	1 475 00	1 465 00
Fat Stock Show	Chicago	255	2 775 00	2 040 00	13						121	920 00	643 00	84	790 00	472 00
Total		4 209	$37 351 60	$20 767 63	10 859	$38 894 35	$27 994 05	684	$4 340 75	$2 434 29	2 870	$9 646 75	$6 615 48	3 864	$15 056 25	$9 398 01

Exhibit Illinois Agricultural Fairs 1881—Continued.

Counties	Location of Fair	Poultry			Mechanic Arts			Farm Products			Horticulture and Floriculture			Fine Arts		
		No entries	Am nt premiums offered	Am nt premiums paid	No entries	Am nt premiums offered	Am nt premiums paid	No entries	Am nt premiums offered	Am nt premiums paid	No entries	Am nt premiums offered	Am nt premiums paid	No entries	Am nt premiums offered	Am nt premiums paid
Adams	Camp Point	88	$84 00	$66 00	127	$106 00	$100 00	481	$255 25	$235 25	654	$236 25	$228 75	142	$106 00	$83 50
Alexander																
Bond																
Boone	Belvidere	19	76 50	11 25	23	178 50	44 25	51	82 50	21 38	24	72 50	31 50	24	59 00	18 75
Brown	Mt Sterling	40	50 00	30 00	92	132 50	95 00	85	50 00	38 00	336	175 75	106 00	27	36 00	19 00
Bureau	Princeton	56	128 25	41 75	74	113 50	32 50	71	151 50	76 50	311	252 50	172 00	31	66 00	32 00
Calhoun																
Carroll	Mt Carroll	6	45 00	3 75	17	100 75	12 00	67	41 25	32 25	199	95 75	85 50	58	50 75	30 75
Cass	Virginia	12	25 50	6 00	49	116 00	57 00	87	85 50	63 50	255	145 00	137 00	20	57 00	52 50
Champaign	Champaign	32	50 00	19 00	44	66 00	50 00	45	70 00	43 00	103	144 00	67 50	29	38 00	14 50
Christian																
Clark																
Clay																
Clinton																
Coles	Charleston	176	257 00	231 00	23	200 50	79 50	117	89 00	48 50	201	142 50	113 00	53	42 00	29 50
Cook																
Crawford																
Cumberland	Prairie City	8	8 00	3 20				21			33	30 50	12 20			
DeKalb	Sandwich	40	81 00	6 48	265		127 00	201		117 50						
DeKalb	Sycamore	21	25 00	9 00	28	47 00	27 00	82	80 00	60 00						
DeWitt	Clinton	79	37 00	21 00	11	95 00	19 00	99	52 00	38 00	222	77 00	59 50	11	24 00	8 00
Douglas	Tuscola	22	32 00	11 90	29	102 00		118	150 50	69 27	128	103 50	27 20	9	15 50	2 55
DuPage	Wheaton	11	65 75	12 00	12	13 00	13 00	30	80 50	34 50	5	17 00	5 00	57	72 50	51 50
Edgar	Paris	202	194 50	192 50	41	97 00	63 00	195	122 00	97 00	622	452 00	367 00	407	211 50	212 00
Edwards	Albion	32	19 50	14 00	57	141 25	108 00	242	125 50	102 50	29	42 00	28 00	14	15 00	5 50
Effingham	Effingham	43	126 00	77 00	8		4 00	116	166 00	85 00	155	139 00	47 00	15	21 00	10 00
Fayette	Vandalia	33	15 00	6 00	55	101 00	9 00	473	268 00	94 50	14	25 00	3 75	189	177 00	40 75
Ford	Paxton	7	28 00	4 00	11	13 50	2 00	53	60 50	23 75	85	77 50	34 25	119	85 00	51 50
Franklin	Benton	18	15 00	10 00				109	55 00	33 50	100	48 00	20 00			
Fulton	Canton	41	65 00	12 60	24	362 00	25 80	361	203 00	91 20	467	264 50	71 40	30	98 00	10 80
Fulton	Avon	64	57 00	37 00	45	75 00	29 00	451	135 00	105 00	624	112 00	87 00			
Gallatin	Shawneetown	22	63 50	19 00	5	99 00	8 85	52	61 00	31 00	77	122 00	70 25	103	90 00	51 00
Greene	Carrollton	55	78 00	54 00	157	198 00	150 00	308	103 00	86 00	846	124 00	101 00	184	102 00	66 00
Grundy																
Hamilton	McLeansboro	33	45 00	20 00	22	121 00	34 00	35	85 00	25 50	109	118 00	41 00	12	36 00	17 50
Hancock	Warsaw	37	5 50	5 50	77	16 00	16 00	34	25 50	25 50	91	30 00	30 00	13	5 50	5 50
Hardin																

Exhibit Illinois Agricultural Fairs—Continued.

Counties	Location of Fair	Poultry			Mechanic Arts			Farm Products			Horticulture and Floriculture			Fine Arts		
		No entries	Am nt premiums offered	Am nt premiums paid	No entries	Am nt premiums offered	Am nt premiums paid	No entries	Am nt premiums offered	Am nt premiums paid	No entries	Am nt premiums offered	Am nt premiums paid	No entries	Am nt premiums offered	Am nt premiums paid
Henderson	Biggsville	57	$25 00	$18 00	33	$75 00	$6 00	168	$54 25	$35 40	475	$95 00	$61 35	23	$16 00	$7 80
Henry	Cambridge		87 00		28	18 00	50 00	165	129 40	168 00	268	196 50	159 00	84	111 50	69 00
Iroquois	Watseka	65	75 00	22 50	13	20 00	7 00	43	93 00	11 50	45	87 50	18 50	13	23 00	5 75
Jackson	Murphysboro	21	25 50	16 50	21	122 00	10 00	95	66 95	3 [illegible]	141	57 60	23 35	6	19 50	1 50
Jackson	Carbondale	12	8 00	6 00	10	82 00	25 00	103	60 00	30 00	26	50 00	2 50			
Jasper																
Jefferson																
Jersey	Jerseyville	91	280 50	113 50	131	350 00	256 00	293	252 00	213 00	498	343 00	288 00	142	169 00	113 00
JoDaviess	Galena	7		10 00	44	55 00	21 00	15	21 00	20 00	22	35 00	18 00	15	30 00	24 00
JoDaviess	Warren	21	88 50	16 50	38	23 50	5 85	53	31 50	9 90	55	43 50	11 70	13	35 50	10 35
Johnson																
Kane	Aurora	21	39 50	10 50	65	57 00	17 00	141	167 50	138 00	31	214 00	80 50	62	76 00	39 00
Kankakee	Kankakee	46	68 25	2 50	32	100 00	51 00	114	134 75	9 25	20	74 50	46 50	25	50 50	28 00
Kendall	Bristol	30	25 75	1 50	40	124 00	13 50	58	82 50	14 75	44	43 00	16 25	30	57 00	31 50
Knox	Knoxville	101	81 00	55 00	150	19 00	140 00	311	112 00	100 00	500	230 00	90 00	150	109 00	40 00
Lake	Libertyville	6	30 00	2 40				24	35 00	9 90	51	33 00	8 85	11	12 00	2 40
Lake	Waukegan	131	274 00	101 75	16	4 00		316	198 50	171 50	163	72 00	40 50	75	43 50	23 50
LaSalle																
Lawrence																
Lee																
Livingston	Fairbury	96	83 00	42 75	61	193 00	11 00	249	130 25	108 00	469	181 80	150 45	19	49 75	18 25
Logan	Lincoln	120	148 50	57 40	86	140 00	3 00	240	150 00	53 25	490	190 00	71 75	87	124 50	25 40
Logan	Atlanta	28	34 00	29 00	93	5 00	54 50	182	74 75	51 75	457	68 75	48 50	40	43 50	16 75
Macon	Decatur	93	105 00	38 00	58	105 00	0 00	102	119 00	59 00	12	55 00	25 33			
Macoupin	Carlinville	18	90 00	29 00	109	242 00	231 00	120	124 00	94 00	164	121 00	99 00	31	31 00	24 00
Madison																
Marion	Salem								57 00	24 25						
Marshall																
Mason	Havana	15	41 00	22 00	74			188	122 00	75 00	183	92 00	64 00	24	25 00	6 00
Massac	Metropolis	2	17 00	1 00	16	85 00	21 00	46	125 00	40 00						
McDonough	Macomb	68	90 50	56 75	45	193 50	68 50	353	128 00	111 50	54	90 50	42 50	45	35 50	13 50
McHenry	Woodstock	19	13 00	13 00	550			101	104 00	104 00	183	88 75	88 75	55	34 50	34 50
McHenry	Marengo	22	21 75	7 25	61	44 00	26 00	142	72 25	50 75	249	94 25	72 50	44	29 00	13 75
McLean																
Menard																
Mercer	Aledo	104	96 00	69 00	85	106 00	53 00	266	122 00	114 00	499	214 00	171 00	195	107 00	90 00
Monroe																

Montgomery	Hillsboro	4	40 00	1 40	69	150 00	20 00	76	88 00	29 00	78	96 00	35 00	21	35 00	8 00
Morgan	Jacksonville	157	166 00	136 50	187	349 50	280 00	265	150 00	122 00	633	287 00	239 50	153	130 25	92 25
Moultrie																
Ogle	Oregon	24	60 00	2 00	28	40 50	8 00	44	58 50	26 25	54	99 50	52 00	28	36 75	15 50
Ogle																
Peoria																
Perry	Pinckneyville	5	21 00	6 00	7			59	77 00	43 00	84	66 00	38 00	11	12 00	4 00
Piatt	Monticello	48	97 50	16 26		20 00		61	61 00	35 00	53	69 00	22 00	10	11 50	6 00
Pike	Pittsfield	28	44 00	31 00	7	15 00	15 00	37	57 00	38 00	12	68 50	58 00	38	34 00	31 00
Pope	Golconda	15	15 00	11 00	35	52 00	28 00	99	67 00	58 00	90	57 00	52 00	18	9 00	5 00
Pulaski																
Putnam																
Randolph	Sparta	10		3 50	30	91 50	45 00	135	83 00	61 50	396	128 00	87 00			
Randolph	Chester	28	47 00	30 00	31	118 00	42 00	188	112 50	64 00	381	92 00	74 25	55	28 00	22 00
Richland																
Rock Island	Port Byron	20	30 00	15 00	31	40 00	20 00	115	70 00	60 00	65	68 00	45 00	40	35 00	25 00
Rock Island	Hillsdale	33	37 50	20 7	24			126	51 00	84 25	128	31 75	33 00	47	23 25	16 00
Saline	El Dorado	13	52 50	7 00	15	124 00	28 00	210	217 00	130 00	7	21 00	5 50	33	63 00	24 00
Saline	Harrisburg	23	18 75	12 00	11	55 50	33 00	161	118 00	74 50	12	34 50	21 00	16	18 00	9 50
Sangamon	Springfield	54	238 50	79 00	53	110 00	45 00	57	348 00	153 00	385	414 00	337 00	93	153 00	101 00
Schuyler	Rushville	62	61 50	36 00	13	132 00	34 25	220	106 50	87 00	254	118 00	93 50	38	27 00	18 00
Scott																
Shelby	Shelbyville	13	86 00	22 00	13	72 00	25 00	23	13 00	7 00	35	32 00	19 00	41	41 00	48 00
Stark	Toulon	30	124 00	17 00	59	22 00	21 00	54	143 00	139 00	745	162 00	143 00	140	93 0	71 00
St Clair																
Stephenson																
Tazewell	Delavan	72	140 25	64 50	121	106 00	44 00	248	121 00	66 25	267	108 25	60 25	63	61 50	31 00
Union	Jonesboro	44	36 00	26 50	41	303 00	116 50	138	82 25	74 25	236	135 50	125 25			
Vermilion	Catlin	19	16 50	11 00	12	90 00	28 00	148	68 50	60 75	237	72 50	71 00	24	31 00	19 00
Vermilion																
Vermilion	Hoopeston	78	91 00	61 00	30	72 00	14 00	125	90 00	57 00	207	100 00	57 [illegible]	14	19 00	9 00
Wabash																
Warren	Monmouth	59	49 00	30 00	67	69 00	37 00	64	71 50	67 50	343	140 50	121 00	28	45 00	29 50
Washington																
Wayne																
White	Carmi	33	52 50	26 00	42	140 00	65 00	129	146 00	71 00	180	96 50	70 00	38	67 00	28 50
Whiteside	Sterling	53	98 00	6 50	39			187	137 50	82 00	370	295 00	212 25	192	120 75	76 00
Whiteside	Morrison	56	63 15	37 75	94	[illegible] 4 00	18 50	292	130 [illegible]	108 25	313	175 00	161 00	29	30 00	20 00
Whiteside	Albany	12	19 00	9 00	20	2 00	2 00	51	50 50	21 50	72	69 75	45 00	58	51 50	30 50
Will																
Williamson	Marion	8	9 00	9 00	34	82 75	59 50	66	53 00	46 00	31	15 50	14 50			
Winnebago	Rockford	60	87 00	39 50	12	43 00	9 50	15	[illegible] 00	94 50	15	331 00	321 00			
Woodford	El Paso	40	61 25	20 50	18	178 00	142 00	199	596 00	304 05	460	222 00	165 00	71	64 25	33 50
State Fair	Peoria	205	812 00	318 00	744	[illegible]	100 00	341	751 00	552 00	363	1 286 00	974 00	186	91 00	56 00
Fat Stock Show	Chicago	65	188 00	156 00												
Total		3 752	$6 388 65	$[illegible] 068 38	5 217	$7 736 75	$3 906 50	12 380	$9 397 70	$6 325 10	17 439	$10 753 65	$7 419 58	4 229	$4 063 55	$2 270 30

Exhibit Illinois Agricultural Fairs, 1881—Continued.

Counties	Location of Fair	Textile Fabrics			Natural History			Speed Rings			Education		
		Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid
Adams	Camp Point	740	$262 50	$234 50				38	$275 00	$275 00			
Alexander													
Bond													
Boone	Belvidere	71	112 00	55 50				23	580 00	295 50			
Brown	Mt Sterling	345	198 50	159 50				43	595 00	570 00			
Bureau	Princeton	351	227 25	193 50				24	705 00	585 00			
Calhoun													
Carroll	Mt Carroll	367	124 75	120 00	3	$13 00	$11 00	27	575 00	575 00			
Cass	Virginia	179	125 50	100 00					765 00				
Champaign	Champaign	87	64 00	46 00	1	6 00	2 00	35	970 00	730 00	1	$24 00	$5 30
Christian													
Clark													
Clay													
Clinton													
Coles	Charleston	211	143 00	98 50		7 50		16	325 00	300 00			
Cook													
Crawford													
Cumberland	Prairie City												
DeKalb	Sandwich							23	202 00	80 80			
DeKalb	Sycamore	112	124 00	59 00					475 00	485 00			
DeWitt	Clinton	149	96 00	58 50				25	507 50	440 00			
Douglas	Tuscola	52	34 00	13 60				42	980 00	980 00			
DuPage	Wheaton	96	63 50	52 50				11	135 00	135 00			
Edgar	Paris	108	75 00	40 00				7	185 00	185 00			
Edwards	Albion	151	124 50	87 50				18	315 00	265 00			
Effingham	Effingham	125	186 00	56 00	3	31 00	22 00	36	535 00	293 00			
Fayette	Vandalia	318	137 00	42 00				11	55 00	20 00			
Ford	Paxton	130	83 25	51 00	1	13 50	1 00	34	674 00	551 40			
Franklin	Benton							21	320 00	255 00	172	100 00	55 00
Fulton	Canton	276	264 00	69 60				12	830 00	150 00			
Fulton	Avon	430	190 00	159 00				20	700 00	618 00			
Gallatin	Shawneetown	9	12 00	9 60	7	21 00	7 00	47	1 305 00	1 098 00	32	32 00	19 00
Greene	Carrollton	1 516	273 50	259 25				47	495 00	372 00			
Grundy													
Hamilton	McLeansboro	108	66 00	38 00				40	1 020 00	525 00			
Hancock	Warsaw	16	5 00	5 00	1	1 00	1 00	19	30 00	30 00			

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Hardin													
Henderson	Biggsville	183	49 75	34 95				14	481 00	62 40			
Henry	Cambridge	209	156 50	102 00					1,765 00	1,635 00			
Iroquois	Watseka	133	110 00	30 75				41	875 00	775 00			
Jackson	Murphysboro	123	76 35	23 35				32	653 50	573 00			
Jackson	Carbondale	243	200 00	151 75				41	777 00	423 00	24	24 00	24 00
Jasper													
Jefferson													
Jersey	Jerseyville	723	347 00	300 00				47	1,410 00	1,410 00			
JoDaviess	Galena	122	95 00	75 00				10	750 00	350 00			
JoDaviess	Warren	145	98 95	48 20				14	510 00	275 00			
Johnson													
Kane	Aurora	271	229 00	184 00	2	16 00	3 00	24	900 00	355 00			
Kankakee	Kankakee	153	123 25	88 75				20	206 00	166 00		95 00	95 00
Kendall	Bristol	112	64 00	43 00				19	330 00	330 00			
Knox	Knoxville	208	290 00	100 00	12			25	450 00	275 00			
Lake	Libertyville	39	30 00	8 10				4	175 00	105 00			
Lake	Waukegan	436	247 50	148 50	13	28 00	17 00	26	1,000 00	290 00			
LaSalle													
Lawrence													
Lee													
Livingston	Fairbury	239	134 36	97 75	10	35 00	24 00	26	605 00	575 00			
Logan	Lincoln	234	157 75	51 75				70	1,530 00	1,226 50			
Logan	Atlanta	166	72 00	55 50	3	5 00	4 00	10	205 00	101 00			
Macon	Decatur	188	182 50	87 17				15	375 00	375 00	275	100 75	100 75
Macoupin	Carlinville	231	174 00	133 00	6	40 00	30 00	38	745 00	695 00			
Madison													
Marion	Salem		106 00	22 50									
Marshall													
Mason	Havana	166	60 00	59 00	12	425 00	160 00						
Massac	Metropolis	59	82 00	40 00				14	300 00	183 00			
McDonough	Macomb	464	156 00	127 25									
McHenry	Woodstock	250	93 00	93 00				25	750 00	750 00			
McHenry	Marengo	177	69 25	46 25				24	654 00	457 00			
McLean													
Menard													
Mercer	Aledo	430	184 00	126 40				11	305 00	305 00			
Monroe													
Montgomery	Hillsboro	78	[illegible]	45 60				2	200 00	30 00			
Morgan	Jacksonville	649	294 75	264 50	15	90 00	47 00	30	2,400 00	1,840 00			
Moultrie													
Ogle	Oregon	137	110 25	56 50	25	28 00	17 00	40	995 00	895 00	2	21 00	4 00
Ogle													
Peoria													
Perry	Pinckneyville	84	79 00	52 00				21	610 00	432 50			
Piatt	Monticello	58	59 50	39 50	4	10 00	6 00	48	850 00	815 00	6	62 00	33 00
Pike	Pittsfield	885	301 50	293 50				35	595 00	455 00			
Pope	Golconda	92	60 00	54 00				28	108 00	78 00			
Pulaski													
Putnam													
Randolph	Sparta	255	105 00	89 50									
Randolph	Chester	201	155 50	119 50				32	1,200 00	860 00			

Exhibit Illinois Agricultural Fairs, 1881—Continued.

Counties	Location of Fair	TEXTILE FABRICS			NATURAL HISTORY			SPEED RINGS			EDUCATION		
		Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid
Richland													
Rock Island	Port Byron	10	$12 00	$8 00				23	$160 00	$120 00			
Rock Island	Hillsdale	99	24 00	29 25				5	92 00	19 50			
Saline	Harrisburg	32	16 50	10 50				49	961 00	898 00			
Saline	Eldorado	167	155 00	107 00				58	1 250 00	900 00			
Sangamon	Springfield	295	394 00	292 00	10	$56 00	$40 00	29	2 500 00	1 655 00			
Schuyler	Rushville	340	184 00	157 00				24	500 00	435 95			
Scott													
Shelby	Shelbyville	125	91 00	67 00									
Stark	Toulon	493	192 00	62 00				9	190 00	190 00	13		
St Clair													
Stephenson													
Tazewell	Delavan	324	153 25	104 25	22	16 00	15 75	28	290 00	190 00			
Union	Jonesboro	296	170 75	142 50	70	107 75	67 75						
Vermilion	Catlin	68	69 00	49 00									
Vermilion													
Vermilion	Hoopeston	235	121 00	89 00				40	1 000 00	650 00			
Wabash													
Warren	Monmouth	261	166 75	110 00				22	750 00	700 00			
Washington													
Wayne													
White	Carmi	200	175 00	170 00				65	1 650 00	1 600 00			
Whiteside	Sterling	381	115 50	83 51	42	62 00	32 50						
Whiteside	Morrison	268	125 25	94 00	26	39 00	30 00	37	651 00	619 00			
Whiteside	Albany									199 00			
Will													
Williamson	Marion	137	85 00	68 50				33	430 00	430 00			
Winnebago	Rockford	365	342 00	323 50	8	47 00	17 00	7	880 00	315 00		$74 05	$74 05
Woodford	El Paso	237	104 5	80 50	21	24 00	16 00	17	600 00	350 00			
State Fair	Peoria	842	587 00	541 00	14	335 00	265 00	31	1 100 00	1 590 00	368	330 50	316 50
Total		19 274	$11 128 15	$7 919 08	331	$1 456 75	$836 00	1 882	$49 297 00	$37 862 55	893	$863 30	$726 60

Exhibit Illinois Agricultural Fairs, 1881—Continued

Counties	Location of Fair	President	Secretary	MISCELLANEOUS EXHIBIT			TOTALS		
				No of entries	Amount of premiums offered	Amount of premiums paid	No of entries	Amount of premiums offered	Amount of premiums paid
Adams	Camp Point	G W Dean	Richard Seaton	66			3 099	$3 043 00	$2 550 00
Alexander									
Bond									
Boone	Belvidere	John Hannah	A E Jenner	15			407	1 949 00	688 13
Brown	Mt Sterling	John J McDonnold	George W Curry				1 398	2 517 25	1 979 50
Bureau	Princeton	Elijah Dee	C P Bascom	145	$99 00	$116 00	1 370	3 575 00	2 423 25
Calhoun									
Carroll	Mt Carroll	H C Blake	Don R Frazer			103 10	1 004	2 031 75	1 521 45
Cass	Virginia	C W Savage	R W Rabourn	23	100 00	168 75	798	2 289 50	1 155 75
Champaign	Champaign	E E Chester	Albert Dunlap	45			654	2 374 00	1 515 30
Christian									
Clark									
Clay									
Clinton									
Coles	Charleston	William Millar	R S Hodgen				1 093	2 568 00	1 846 00
Cook									
Crawford									
Cumberland	Prairie City	William N Berry	George Brewster			36 60	234	646 50	303 20
DeKalb	Sandwich	F Baldwin	J M Hummell			20 00	600	1 040 00	1 002 98
DeKalb	Sycamore	Hiram Holcomb	B F Wyman	3		1 50	501	1 240 00	624 50
DeWitt	Clinton	James A Wilson	W B Rundle	13	26 00	26 00	980	1 614 50	1 093 50
Douglas	Tuscola	Isaac Cosler	Chas G Lockhart	7	15 00	12 75	577	2 156 30	1 394 66
DuPage	Wheaton	W K Patrick	A D Kelley				307	926 25	[illegible] 50
Edgar	Paris	W O Wilson	H B Adams		201 50		1 88[illegible]	3 284 50	2 761 50
Edwards	Albion	John Curtis	Morris Emmerson				827	1 [illegible]86 75	1 434 00
Effingham	Effingham	E H Bishop	Owen Scott				619	2 3[illegible]5 00	1 147 00
Fayette	Vandalia	D M Clark	L Easterday	76	9 00	9 50	1 400	1 484 50	429 00
Ford	Paxton	Chas Bogardus	Geo A Hill	26			942	2 495 25	1 [illegible]56 90
Franklin	Benton	P S Pope	John W Hill Jr	18			378	1 199 00	832 00
Fulton	Canton	J B Gardiner	C A Emry	61	160 00	5 [illegible]	1 640	3 907 50	910 80
Fulton	Avon	W H Rose	H F Townsend	140		35 00	2 201	2 548 00	1 857 00
Gallatin	Shawneetown	M M Pool	John L Robinson				509	3 159 50	2 177 20
Greene	Carrollton	H Tunison	N T Andrews	3	30 00	20 00	3 455	2 672 50	1 983 25
Grundy									
Hamilton	McLeansboro	J T Buck	G B Wheeler				577	2 365 00	1 305 00
Hancock	Warsaw	A C Hammond	James F Johnson	30	5 00	5 00	467	278 50	278 50
Hardin									
Henderson	Biggsville	H M Whiteman	Robert A McKinley	42		3 90	1 233	1 743 50	617 40

Exhibit Illinois Agricultural Fairs, 1881—Continued

Counties	Location of Fair	President	Secretary	MISCELLANEOUS EXHIBIT No of entries	MISCELLANEOUS EXHIBIT Amount of premiums offered	MISCELLANEOUS EXHIBIT Amount of premiums paid	TOTALS No of entries	TOTALS Amount of premiums offered	TOTALS Amount of premiums paid
Henry	Cambridge	N C Gilbert	R H Hinman	21		$30 00	936	$3 746 50	$2 908 00
Iroquois	Watseka	Daniel Fry	Robert Hayes				588	2 254 50	1 364 00
Jackson	Murphysboro	Philip Kimmel Sr	C M Bradley	17	$32 00	3 50	552	1 760 90	968 95
Jackson	Carbondale	James M Scurlock	Samuel T Brush	11			677	2 985 00	1 472 75
Jasper									
Jefferson									
Jersey	Jerseyville	Wm H Fulkerson	Morris R Locke				2 416	5 418 50	4 579 50
JoDaviess	Galena	Geo S Avery	Frank Bostwick				373	1 495 00	914 25
JoDaviess	Warren	Robert Hawley	W L Gale				417	1 188 95	636 00
Johnson									
Kane	Aurora	H H Evans	W S Beaupre	48	271 00	216 00	919	3 410 00	1 598 00
Kankakee	Kankakee	Milo Barnard	Henry S Bloom	35	20 00	28 50	750	1 794 25	1 199 50
Kendall	Bristol	Andrew Welsh	William Hill			160 50	452	1 202 45	885 05
Knox	Knoxville	D M Eiker	O L Campbell	80	420 00	87 48	2 057	3 316 00	1 553 48
Lake	Libertyville	W H Appley	H L McCullough	12	25 00		337	996 00	258 75
Lake	Waukegan	John F Powell	C A Partridge			119 00	1 394	3 534 50	1 533 25
LaSalle									
Lawrence									
Lee									
Livingston	Fairbury	R C Straight	H L Bruce	48		61 75	1 624	3 704 15	2 795 95
Logan	Lincoln	Joseph Ream	W. H Derby	248	49 30	18 85	2 075	4 310 05	2 236 40
Logan	Atlanta	Frank Hoblit	J P Hieronymus	25	148 50	30 00	1 313	1 909 00	1 061 00
Macon	Decatur	J G Willard	M B Thomas				995	2 747 25	1 493 57
Macoupin	Carlinville	Joseph Bird	F W Burton	33	136 00	50 00	1 158	3 019 00	2 455 00
Madison									
Marion	Salem	A Coffin	L O Vogt			13 00		1 046 60	662 75
Marshall									
Mason	Havana	Walter S Dray	S F Kyle	38			803	1 755 00	675 00
Massac	Metropolis	J C Willis	J M Stone	22		5 00	212	903 00	463 00
McDonough	Macomb	C V Chandler	W H Hamline	1	40 00	5 00	1 239	1 734 00	924 00
McHenry	Woodstock	Thos McD Richards	A S Wright	250		61 38	1 801	1 617 25	1 678 63
McHenry	Marengo	L W Sheldon	J S Rogers	45		6 25	1 004	1 710 50	1 027 75
McLean									
Menard									
Mercer	Aledo	James Feather	C F Durston				1 984	2 631 00	2 037 40
Monroe									
Montgomery	Hillsboro	Moses Berrie	Wm K Jackson				415	1 414 75	328 40
Morgan	Jacksonville	F M Morton	J M Dunlap	2	30 00	15 00	2 542	5 846 75	4 767 75

Moultrie									
Ogle	Oregon	Geo. W. Hornell	H. P Lason	14	420 00	183 95	560	2,784 50	1,582 70
Ogle									
Peoria									
Perry	Pinckneyville	W. K Murphy	R G. Williams	10	75 00	50 00	349	1,657 00	889 00
Piatt	Monticello	J. W. Warner	H D. Peters				428	2,046 50	1,496 25
Pike	Pittsfield	E. N French	J H. Crane				1,222	2,226 00	1,686 50
Pope	Golconda	John M. Boicourt	J. E Y. Hanna	22	9 00	10 50	521	788 00	644 50
Pulaski									
Putnam									
Randolph	Sparta	E. B McGuire	John G. Taylor				1,087	2,177 00	1,208 25
Randolph	Chester	Wm A. Gordon	Wm Schuchert	62	37 50	33 50	1,060	2,844 50	1,773 25
Richland									
Rock Island	Port Byron	A F Holister	L S Pearsall				394	768 00	462 00
Rock Island	Hillsdale	John A. Liphardt	George W Guernsey				556	606 90	344 50
Saline	Harrisburg	W E Burnett	F M Pickett	138	33 00	32 50	659	2,277 25	1,697 00
Saline	Eldorado	W. H. Pankey	S T Webber				721	3,173 50	2,185 50
Sangamon	Springfield	George Pickrell	Phil M Springer				1,481	7,726 50	4,759 00
Schuyler	Rushville	Edwin M. Anderson	Mark Bogue	2	24 00	12 00	1,265	2,230 50	1,650 70
Scott									
Shelby	Shelbyville	James P Davis	George A Roberts	192	478 00	464 00	533	1,442 00	1,042 00
Stark	Toulon	Henry Colwell	Chas. Myers				2,414	2,405 00	1,873 00
St Clair									
Stephenson									
Tazewell	Delavan	Ira B Hall	George W. Patton		80 00	80 00	1,698	2,736 25	1,810 00
Union	Jonesboro	Josiah Bean	Joseph H Samson	135	44 75	43 75	1,208	1,885 00	1,410 50
Vermilion	Catlin	J. H. Oakwood	G W F. Church	6			775	1,529 50	985 75
Vermilion									
Vermilion	Hoopeston	J. A. Cunningham	Dale Wallace				1,269	2,850 00	1,988 00
Wabash									
Warren	Monmouth	R. S Patton	George C Rankin	2	47 50	40 00	1,117	2,813 75	2,311 00
Washington									
Wayne									
White	Carmi	J R. Williams	Richard L Organ	44			965	4,382 00	2,802 50
Whiteside	Sterling	R. B. Witmer	W. F Eastman	226	185 00	31 25	1,673	1,856 75	951 51
Whiteside	Morrison	Robert E Logan	Ed J Congar	139	115 75	69 00	1,577	2,385 90	1,832 50
Whiteside	Albany	E. H. Nevitt	J F Happer				303	545 75	460 00
Will									
Williamson	Marion	A N Lodge	L A. Goddard	3			524	1,575 25	1,240 00
Winnebago	Rockford	John C. Chappell	Henry P. Kimball	25			976	3,003 55	1,899 05
Woodford	El Paso	Ed Hodgson	D A Espy	32			1,605	3,523 25	2,327 65
State Fair	Peoria	Jas R. Scott	S D Fisher			829 82	4,991	16,201 50	15,563 32
Fat Stock Show	Chicago	Jas R Scott	S D Fisher			12 00	538	4,673 00	3,323 00
Total				2,702	$3,426 80	$3,418 58	90,585	$209,802 00	$140,862 13

FINANCIAL EXHIBIT ILLINOIS AGRICULTURAL FAIRS 1881

Counties	Amount in treasury last report	Amount of deficit last report	Amount interest on previous indebtedness	Amount received gate and entry fees	Amount received booth rents and permits	Amount received sale of shares of stock	Amount received State appropriation	Amount received other sources	Amount paid in premiums	Amount paid real estate, buildings, etc.	Amount paid current expenses, not premiums	Amount paid on previous years' indebtedness	Amount in treasury	Amount deficit
Adams	$620 58			$4 800 70	$479 70	$50 00	$100 00	$239 41	$2 550 00	$745 08	$1 235 58		$1 759 73	
Alexander														
Bond														
Boone	64 74			1 644 50	216 00		100 00	40 00	688 13	308 08	1 119 31			$50 28
Brown		$1 786 21		2 473 20	312 00	50 10	100 00	609 00	1 979 50	100 00	1 200 80	$264 00		1 786 21
Bureau		4 120 10	$301 10	3 661 35	248 25	10 00	100 00	121 90	2 423 25	225 00	838 28		13 77	3 840 00
Calhoun														
Carroll	233 70	1 467 50		2 210 20	292 24		100 00		1 521 35		937 31		153 76	1 243 78
Cass	16 97			1 311 95	45 00		100 00	374 16	1 155 75		692 33			
Champaign		7 560 42	520 18	1 965 65	299 05		100 00	529 00	1 515 30		785 00			7 485 20
Christian														
Clark														
*Clay		16 00	1 28					45 00			2 72		25 00	
Clinton														
Coles	18 50	46 91		1 988 73	242 45		100 00	75 00	1 846 00	2 506 63	511 29			2 486 15
Cook														
Crawford														
Cumberland			100 00	508 65	152 96		100 00		303 20		103 87	254 55		
DeKalb— Sandwich	37 44			1 901 17	237 29		50 00	161 00	1 002 98		974 32		409 60	
DeKalb— Sycamore	18 76	100 00	10 00	955 00	188 17		33 33	70 00	624 50	26 40	549 36	100 00		145 00
DeWitt	25 90	125 00	12 50	1 543 00	598 40	35 00	100 00	50 00	1 093 50	245 95	746 76	75 00	23 58	850 00
Douglas	41 85			1 810 06	115 00		100 00	269 60	1 394 66	550 00	391 85			
DuPage	7 83	350 00	28 00	583 65	36 00	27 00	100 00	146 62	563 50		304 15		5 45	350 00
Edgar	816 00			2 553 49	276 00		100 00	403 00	2 761 50	250 00	225 00		956 99	
Edwards	1 013 82			1 451 40	125 00		100 00	188 25	1 434 00	810 62	217 95		365 90	
Effingham				455 57	76 67	688 20	100 00	114 10	1 147 00		205 89	81 15		
Fayette	8 85			453 35	110 25		100 00	227 80	429 00		453 45		17 80	
Ford	45 97			1 930 46	383 00		100 00	775 00	1 786 90	212 06	1 051 76	149 50	34 21	
Franklin	3 77	35 00		1 073 20			100 00		832 00	100 00	374 97	35 00		200 00
Fulton— Canton	6 10			2 017 00	180 00		50 00	25 00	910 80	446 15	902 25		18 90	
Fulton— Avon	71 39			2 315 00	329 25		50 00	334 21	1 857 00	75 00	631 97	102 00	433 88	
Gallatin	640 00			2 286 15	675 00		100 00		2 177 20	475 00	888 00		161 45	
Greene	192 63			2 794 30	371 50		100 00	945 35	1 993 25	100 00	1 814 26	61 31	434 96	
Grundy														
Hamilton	177 08	2 440 00	195 20	1 509 10	1 061 80		100 00	82 75	1 305 00		268 51	635 20	86 82	2 000 00
Hancock						4 000 00		300 00	278 50	1 500 00	21 50		2 500 00	

Hardin														
Henderson		377 74	28 00	729 10	154 90		100 00	127 75	617 40	75 00	375 00			361 39
Henry	6 92	1 554 00	117 80	3 307 07	793 45		100 00	166 49	2 908 00	395 86	631 92	152 20	15 95	1 401 80
Iroquois				2 000 00	601 00		50 00		1 364 00		387 00		900 00	
Jackson— Murphysboro	118 75	500 00	40 00	1 181 29	195 31				968 95	661 86	298 75			874 21
Jackson— Carbondale	420 82			2 152 95	221 00			84 92	1 472 75	454 23	291 05	486 00	175 68	
*Jasper	221 26					35 00	100 00	24 00		750 95	187 31			558 00
Jefferson														
Jersey	2 098 50			2 827 10	866 00			912 90	4 579 50	443 76	3 010 17	234 80		1 563 73
JoDaviess— Galena				1 502 25	250 00		50 00	25 00	914 25	475 00	282 00	156 00		
JoDaviess— Warren	26 15	500 00	40 00	639 35	156 75		50 00	26 15	636 00		352 41			630 01
Johnson														
Kane				1 931 78	521 75		100 00	21 00	1 598 00		898 18		78 35	
Kankakee				1 687 80	103 35		100 00	1 670 00	1 199 50		612 81	1 389 65	359 19	
Kendall				1 419 55	50 00		100 00		885 00	250 00	454 55			
Knox	170 00			1 496 70	341 00		100 00	140 00	1 553 48	100 00	816 80			222 58
Lake— Libertyville				392 70	63 84		50 00	14 09	258 75	84 75	150 37		26 76	
Lake— Waukegan	857 62	4 000 00		2 263 75	655 50	705 00	50 00	150 00	1 533 25		1 343 71	1 000 00	304 91	4 000 00
*LaLalle	51 27						100 00				134 59		16 68	
Lawrence														
Lee														
Livingston— Fairbury	197 80	1 600 00		2 738 45	265 00		50 00	1 177 16	2 795 95		1 671 90			1 639 44
Logan— Lincoln		926 86		2 515 80	534 60		50 00	37 45	2 236 40	487 57	1 483 03			1 938 01
Logan— Atlanta	29 53	1 700 00	149 60	1 737 50	156 75		50 00	462 35	1 061 00	159 82	440 60	300 00	25 05	1 400 00
Macon	7 44			1 893 33	240 25		100 00	125 60	1 493 57	261 43	558 27	52 75		
Macoupin	1 237 83			2 545 85	854 90		100 00	273 15	2 455 00	346 84	1 240 00	139 75	816 14	
Madison														
Marion				565 90	149 25	530 00			662 75	250 00	100 00		202 40	
Marshall														
Mason	32 82			633 68	125 [illegible]		100 00		675 00	830 48	386 02			1 000 00
Massac		661 96		547 80	539 00		100 00	148 50	463 00	244 04	364 80	100 00	163 46	661 96
McDonough		4 052 47	324 20	410 20	132 00		100 00	1 424 20	924 00		500 00	324 00		4 058 28
McHenry— Woodstock		2 500 00	195 00	2 206 75	509 10			48 80	1 678 63	541 00	911 12			3 061 90
McHenry— Marengo				1 437 43	133 00			55 00	1 027 75		597 68			
McLean														
Menard														
Mercer	42 35			2 800 39	524 00		100 00	285 90	2 037 40	170 93	730 99	371 40	441 92	
Monroe														
Montgomery	37 65			658 25	171 10			67 00	328 40	75 00	530 60			
Morgan		3 398 17	248 00	5 858 90	717 00		100 00	33 50	4 767 75	826 08	1 770 82	65 62		4 367 04
Moultrie														

Financial Exhibit Illinois Agricultural Fairs, 1881—Continued

Counties	Amount in treasury last report	Amount of deficit last report	Amount interest on previous indebtedness	Amount received gate and entrance fees	Amount received for rents and permits	Amount received sale shares of stock	Amount received State appropriation	Amount received other sources	Amount paid in premiums	Amount paid real estate buildings etc	Amount paid current expenses not premiums	Amount paid on previous years indebtedness	Amount in treasury	Amount deficit
Ogle—Oregon		$1 408 34	$105 70	$2 597 88	$465 33	$75 00	$50 00	$53 61	$1 852 70	$515 78	$619 30			$900 00
Ogle														
Peoria														
Perry	767 97			1 138 90	310 25		100 00	33 20	889 00	26 85	471 35		$963 12	
Piatt	1 197 42			2 847 08	965 50	2 50	100 00	167 78	1 496 25	752 90	907 11		2 164 02	
Pike	75 76			2 408 40	599 25		100 00		1 686 50	835 15	661 76			
Pope	217 49	900 00	76 50	1 068 00	74 20		100 00		644 50	224 95	90 00		423 84	900 00
Pulaski														
Putnam														
Randolph—Sparta		1 239 92	103 00	1 112 90	301 00			765 22	1 208 25		1 300 75		77 20	1 750 00
Randolph—Chester	823 80			2 298 80	656 40			2 500 00	1 773 25	3 310 00	879 90		315 85	
Richland														
Rock Island—Port Byron				570 00	200 00			278 50	462 00	200 00	368 25		38 25	
Rock Island—Hillsdale	40 45	250 00	20 00	354 35	186 35			606 50	344 50	91 41	654 41		67 84	250 00
Saline—Harrisburg				1 884 45	362 50	3 570 00		1 430 00	1 691 00	3 329 10	296 85		1 430 00	
Saline—Eldorado				1 346 25	399 75	3 520 40		45 00	2 185 50	6 1 9 10	433 00		5 20	2 851 40
Sangamon	50 00			2 472 05	476 50			3 634 00	4 759 00	255 09	1 584 84		33 62	
Schuyler		588 19		1 993 80	305 50		100 00	172 21	1 650 70	154 84	384 39	$250 86		457 47
Scott														
Shelby	293 17			1 634 98	1[illegible] 25	20 00	100 00	154 00	1 042 00	381 90	566 69		387 81	
Stark—Toulon	582 48			2 119 25	609 15		100 00	27 35	1 873 00	204 75	1 046 78		313 70	
St Clair														
Stephenson														
Tazewell		628 11	96 00	1 917 30	526 [illegible]	689 00	100 00	25 00	1 810 00	211 00	1 560 00			1 047 06
Union—Jonesboro				1 577 55	350 94		100 00	94 00	1 410 50	45 90	619 03	25 06	22 00	
Vermilion—Catlin		550 92		842 00	293 20		466 68	294 03	985 75	54 25	821 65		38 26	955 92
Vermilion—Danville														
Vermilion—Hoopeston		230 17		2 401 79	952 00		466 66	40 00	1 988 00	355 21	754 42	162 50	338 52	368 37

Wabash														
Warren		8 000 00		3 713 05	406 00			8 001 50	2 311 00	1 536 44	1 191 09			827 98
Washington														
Wayne														
White		1 659 85	100 00	3 300 00	900 00		100 00	199 75	2 802 50	300 00	1 100 00			1 462 60
Whiteside—Sterling				4 345 45	506 31		50 00	103 25	951 51		3 959 67	353 13		199 36
Whiteside—Morrison		578 03	63 30	2 417 85	470 25		50 00	1 193 01	1 832 50	391 23	1 422 79	706 19		862 93
Whiteside—Albany	10 34	355 20		548 95	635 10				460 00		551 11	180 20	3 08	355 20
Will														
Williamson	34 17			1 418 85	184 00		100 00	50 75	1 240 00	50 00	408 45		89 32	
Winnebago	1 535 60	7 650 00	715 50	3 409 65			100 00	741 85	1 899 05		3 485 17	715 50		8 678 12
Woodford	36 11	1 853 00	138 [illegible]	1 968 55	269 25	2 2 5 00	100 00	379 16	2 327 65	700 00	865 76	1 050 00	271 04	2 178 54
State Fair		206 82		19 387 50	3 273 39		3 000 00		15 563 32		10 563 94			733 19
Fat Stock Show		2 891 23		2 967 75				4 085 00	3 323 00		3 747 78			2 909 26
Total	$15 328 35	$69 668 13	$3 869 88	$172 471 08	$32 050 01	$15 752 20	$5 766 67	$38 096 83	$140 862 13	$36 526 91	$80 305 12	$9 973 38	$17 411 96	$75 952 37

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* No Fair held in 1881

† For 1879 and 1880

FAIR ASSOCIATIONS, CAPITAL STOCK, REAL ESTATE, VALUE OF IMPROVEMENTS, ETC., 1881.

Counties.	Location of Fair.	Amount authorized capital stock	Numb'r of shar's of stock issued	Amount of stock issued	Par value per share of stock.	Numb'r of share-hold's or members	Cash value of real estate and improvements thereon	Number of vol um's in Libra'y	Date of incorporation or organization.	Time of holding Fair in 1881.
Adams	Camp Point		492	$4,920 00	$10 00	344	$6,000 00		——, 1876.	September 5, 6, 7, 8, 9
Alexander										
Bond										
Boone	Belvidere	$6,070 00	607	6,070 00	10 00	221	10,000 00		January 3, 1867	September 6, 7, 8, 9
Brown	Mt. Sterling	5,000 00	500	5,000 00	10 00	166	3,000 00		January 25, 1878	August 22, 23, 24, 25, 26
Bureau	Princeton						1,100 00		July 7, 1855	September 20, 21, 22, 23
Calhoun										
Carroll	Mt. Carroll						3,000 00		——, 1856	September 6, 7, 8, 9
Cass	Virginia									September 20, 21, 22, 23
Champaign	Champaign	15,000 00	375	18,750 00	50 00	278	10,000 00		October 8, 1870	August 29, 30, 31, September 1, 2, 3.
Christian										
Clark										
Clay		25,000 00	406	1,000 00	12 50	308	12,000 00		——, 1873	No Fair held in 1881
Clinton										
Coles	Charleston		99			86	6,000 00		——, 1841	September 13, 14, 15, 16, 17
Cook										
Crawford										
Cumberland	Majority Poi't					65	1,600 00		July 6, 1872	September 28, 29, 30, October 1
DeKalb	Sandwich		37	4,700 00		9	6,000 00		——, 1860.	September 19, 20, 21, 22, 23
DeKalb	Sycamore	2,650 00	525	2,650 00	5 00	132	3,000 00		March 12, 1870	September 20, 21, 22, 23
DeWitt	Clinton		407	4,070 00	10 00	215	4,000 00		October 4, 1870	August 22, 23, 24, 25, 26
Douglas	Tuscola	6,000 00	188	2,350 00	12 50	45	3,600 00		August 26, 1872	October 11, 12, 13, 14
DuPage	Wheaton						2,000 00		——, 1853	September 6, 7, 8
Edgar	Paris	4,000 00	300		20 00	200	6,000 00		—— 1852	October 5, 6, 7, 8
Edwards	Albion								——, 1856	October 4, 5, 6, 7
Effingham	Effingham		217	1,085 00		198			May 13, 1880	October 18, 19, 20, 21, 22
Fayette	Vandalia		503	2,515 00	5 00	153	1,700 00		November 5, 1857	September 20, 21, 22
Ford	Paxton								——, 1872.	August 30, 31, September 1, 2
Franklin	Benton						1,500 00			October 4, 5, 6, 7
Fulton	Canton									October 4, 5, 6, 7, 8
Fulton	Avon	10,000 00	254	6,350 00	25 00	156	8,350 00		——, 1872.	September 20, 21, 22, 23
Gallatin	Shawneetown	4,000 00	400	4,000 00	10 00	48	7,000 00		August 31, 1872	August 30, 31, September 1, 2.
Greene	Carrollton	8,000 00	121	6,050 00	50 00	87	8,600 00		March 20, 1875	October 18, 19, 20, 21
Grundy										
Hamilton	McLeansboro	2,500 00	25	2,500 00	100 00	16	7,000 00		July 29, 1880	September 13, 14, 15, 16, 17
Hancock	Warsaw	4,000 00	400	4,000 00		200	1,500 00		October, 1881	October 5, 6, 7
Hardin										
Henderson	Biggsville					300,	3,500 00		——, 1855.	September 13, 14, 15, 16.

Henry	Cambridge	10 000 00	396	1 980 00	5 00	651	10 000 00		September 2 1872	August 29 30 31 September 1 2
Iroquois	Watseka									August 15 16 17 18 19
Jackson	Murphysboro	5 000 00	200	5 000 00		60	5 000 00		July 19 1869	September 21 22 23 24
Jackson	Carbondale	5 000 00	79	3 950 00	50 00	39	3 500 00		November 20 1879	October 10 11 12 13 14
Jasper	Newton	3 000 00	292	2 920 00	10 00	99	1 500 00		——— 1870	No Fair held in 1881
Jefferson										
Jersey	Jerseyville	20 000 00	513	12 825 00	25 00	413	20 788 76		April 13 1868	October 11 12 13 14
JoDaviess	Galena	25 000 00	2 200	11 000 00	5 00	200	10 000 00		——— 1856	September 27 28 29 30
JoDaviess	Warren	10 000 00	500	10 000 00	20 00	46	4 000 00	31	——— 1869	September 13 14 15 16
Johnson										
Kane	Aurora									September 13 14 15 16
Kankakee	Kankakee						5 300 00		September 1855	September 20 21 22 23
Kendall	Bristol						3 000 00		——— 1852	September 6 7 8 9
Knox	Knoxville					218	5 000 00		——— 1852	September 12 13 14 15 16
Lake	Libertyville						1 000 00		——— 1852	September 21 22 23
Lake	Waukegan	12 000 00	320	8 000 00	25 00	80	18 000 00		June 5 1871	September 26 27 28 29 30 October 1
LaSalle										
Lawrence										
Lee										
Livingston	Fairbury	[illegible] 000 00	210	[illegible]	[illegible]	200			March 25 1876	September 5 6 7 8 9
Logan	Lincoln	12 100 00	480	9 [illegible] 00	20 00	145	12 000 00		July 2 1872	August 29 30 31 September 1 2
Logan	Atlanta	20 000 00	292	5 840 00	20 00	182	5 000 00	53	February 15 1861	September 6 7 8 9
Macon	Decatur						5 000 00	100	——— 1857	September 20 21 22 23
Macoupin	Carlinville	[illegible] 500 00	260	6 510 00	25 00	245	[illegible] 000 00	25	April 29 1880	September 6 7 8 9
Madison										
Marion	Salem	500 00	20	500 00	1 00	18	1 000 00		March 15 1881	September 20 21 22 23
Marshall										
Mason	Havana	5 000 00							March 30 1872	October 4 5 6 7
Massac	Metropolis	2 500 00	25	2 500 00	100 00	17	4 000 00		July 22 1867	September 13 14 15 16
McDonough	Macomb		684	3 420 00	5 00	102	10 000 00		——— 1854	September 13 14 15 16
McHenry	Woodstock					60	10 000 00		May 1852	September 13 14 15 16
McHenry	Marengo	2 500 00	220	2 200 00	10 00	78			January 1876	September 27 28 29 30
McLean										
Menard	Aledo						5 000 00		March 28 1854	September 20 21 22 23
Mercer										
Monroe										
Montgomery	Hillsboro						3 [illegible]00 00		——— 1854	September 27 28 29 30
Morgan	Jacksonville	10 000 00	374	7 480 00	20 00		18 000 00		August 31 1851	August 22 23 24 25 26
Moultrie										
Ogle	Oregon	10 000 00	732	3 660 00	5 00		5 000 00			September 21 22 23 24
Ogle										
Peoria										
Perry	Pinckneyville						5 000 00		October 12 1872	October 5 6 7
Piatt	Monticello		725	3 587 00	5 00	593	4 500 00		——— 1856	August 15 16 17 18 19
Pike	Pittsfield									September 20 21 22 23
Pope	Golconda					201	1 500 00		——— 1858	October 5 6 7 8
Pulaski										
Putnam										
Randolph	Sparta									September 28 29 30
Randolph	Chester	10 000 00	500	5 000 00	10 00	76	12 500 00		August 12 1874	October 11 12 13 14
Richland										
Rock Island	Port Byron					26				September 7 8 9

Fair Associations, Capital Stock, Real Estate, Value of Improvements, Etc., 1881—Continued

Counties	Location of Fair	Amount authorized capital stock	Number of shares of stock issued	Amount of stock issued	Par value per share of stock	Number of shareholders or members	Cash value of real estate and improvements thereon	Number of volumes in Library	Date of incorporation or organization	Time of holding Fair in 1881
Rock Island	Hillsdale					37	$1 000 00	25	January 1 1870	September 14 15 16 17
Saline	Harrisburg	$5 000 00	357	$3 570 00	$10 00	45	4 500 00		February 10 1880	October 4 5 6 7
Saline	Eldorado	7 000 00	306	3 060 00	10 00	115	6 139 00		June 9 1881	September 20 21 22 23 24
Sangamon	Springfield	25 000 00	601	15 025 00	25 00	514	27 597 08	50	——— 1852	September 12 13 14 15 16 17
Schuyler	Rushville					600	2 500 00		——— 1856	August 30 31 September 1 2
Scott										
Shelby	Shelbyville	5 000 00	348	3 480 00	10 00	100	3 500 00		June 6 1857	September 21 22 23 24 25
Stark	Toulon					715	15 000 00		——— 1853	September 20 21 22 23
St Clair										
Stephenson										
Tazewell	Delavan	6 000 00	567	5 670 00	10 00	300	7 000 00		July 5 1879	September 12 13 14 15 16
Union	Jonesboro								——— 1855	September 13 14 15 16 17
Vermilion	Catlin					23	800 00		——— 1851	September 13 14 15 16
Vermilion										
Vermilion	Hoopeston	5 000 00	337	3 337 00	10 00	140	5 000 00		July 14 1873	August 22 23 24 25 26
Wabash										
Warren	Monmouth					270	6 500 00		August 7 1852	September 6 7 8 9
Washington										
Wayne										
White	Carmi	4 000 00	400	4 000 00	10 00	198	12 500 00		May 23 1879	September 6 7 8 9 10
Whiteside	Sterling									September 13 14 15 16
Whiteside	Morrison					1 000	3 790 02		——— 1872	September 6 7 8 9
Whiteside	Albany					175			September 8 1875	August 31 September 1 2
Will										
Williamson	Marion					700	3 800 00		——— 1857	September 27 28 29 30
Winnebago	Rockford	8 000 00	1 600	8 000 00	5 00	250	30 000 00		February 15 1855	September 12 13 14 15 16
Woodford	El Paso	5 000 00	500	5 000 00	10 00	290	6 500 00		January 20 1880	September 12 13 14 15 16
Total		$337 026 00	19 903	$238 372 00	$816 00	12 311	$445 754 80	284		

REPORT OF PURE-BRED STOCK EXHIBITED AT ILLINOIS AGRICULTURAL FAIRS—1881.

Counties.	Shorthorn Cattle					Hereford.					Devon				
				Owned in county.					Owned in county.					Owned in Co.	
	Number of entries	Amount of premiums offered	Amount of premiums paid ..	Number of entries ..	Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid ...	Number of entries ..	Amount of premiums paid	Number of entries	Amount of premiums offered.	Amount of premiums paid ..	Number of entries ..	Amount premiums paid
Adams	28	$169	$157	26	$152	...	$169	...	...	...	...	...	...	...	...
Alexander	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bond	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Boone	16	57	24	16	24	12	57	$30	...	...	...	$50	...	...	...
Brown	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bureau	57	366	343	57	343	...	...	...	...	...	...	...	...	...	...
Calhoun	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carroll	44	101	97	44	97	...	...	...	...	...	...	...	...	...	...
Cass	10	184	104	10	104	...	...	...	...	...	...	...	...	...	...
Champaign	11	182	152	11	152	...	...	...	...	...	...	...	...	...	...
Christian	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Clark	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Clay	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Clinton	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coles	23	229	197	22	193	...	90	...	...	...	...	...	...	...	...
Cook	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Crawford	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cumberland	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
DeKalb—Sycamore	16	62	53	2	9	...	...	...	...	...	...	...	...	...	...
DeWitt	2	110	16	2	16	...	...	...	...	...	...	...	...	...	...
Douglas	...	191	...	...	...	...	...	...	...	...	...	...	...	...	...
DuPage	3	56	12	3	12	...	...	...	...	...	...	...	...	...	...
Edgar	38	563	538	29	285	...	...	...	...	...	...	...	...	...	...
Edwards	20	65	55	20	55	...	...	...	...	...	10	65	$38	10	$38
Effingham	8	93	48	4	22	...	...	...	...	...	...	...	...	...	...
Fayette	9	38	36	6	36	...	...	...	...	...	...	...	...	...	...
Ford	13	309	255	...	...	...	58	...	...	...	8	60	48	...	...
Franklin	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fulton—Canton	11	71	54	11	54	...	...	...	...	...	1	72	8	1	8
Fulton—Avon	52	120	80	...	...	...	...	...	...	...	40	120	66	...	...
Gallatin	24	164	149	4	15	...	...	...	...	...	...	...	...	...	...
Greene	15	100	68	15	68	...	100	...	...	...	...	60	...	...	...
Grundy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hamilton	9	79	59	...	...	...	...	...	...	...	...	...	...	...	...
Hancock	27	5	5	27	5	...	...	...	...	...	...	...	...	...	...
Hardin	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Henderson	13	94	36	7	23	...	...	...	...	...	...	...	...	...	...
Henry	29	201	189	20	87	12	60	42	12	$42	...	...	...	...	...
Iroquois	7	87	27	7	27	1	85	8	1	8	...	...	...	...	...
Jackson—Murphysb	6	42	17	6	17	...	...	...	...	...	7	39	21	7	21
Jackson—Carbondale	2	125	10	2	10	...	122	...	...	...	11	122	75	1	10
Jasper	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jefferson	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jersey	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
JoDaviess—Galena	30	09	88	30	88	...	...	...	...	...	...	...	...	...	...
JoDaviess—Warren	22	78	67	9	36	...	...	...	...	...	...	...	...	...	...
Johnson	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kane	52	81	75	23	40	...	81	...	...	...	...	81	...	...	...
Kankakee	26	88	70	26	70	1	88	10	...	...	...	...	...	...	...
Kendall	15	44	29	15	29	6	44	15	6	15	...	44	...	...	...
Knox	20	479	150	20	150	...	...	...	...	...	...	...	...	...	...
Lake	13	74	5	17	5	...	74	...	...	...	...	74	...	...	...
LaSalle	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Report of Pure-Bred Stock—Continued.

Counties	SHORTHORN CATTLE					HEREFORD					DEVON				
	Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in county		Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in county		Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in Co	
				Number of entries	Amount of premiums paid				Number of entries	Amount of premiums paid				Number of entries	Amount premiums paid
Lawrence															
Lee															
Livingston															
Fairbury	5[illegible]	$299	$2[illegible]8	23	$51	32	$215	$177			13	$170	$88	13	$88
Logan															
Lincoln	46	298	150	20	41		[illegible]								
Logan—															
Atlanta	7	73	33												
Macon															
Macoupin	7	152	84												
Madison															
Marion															
Marshall															
Mason															
Massac															
McDonough															
McHenry															
Woodstock	30	43	43	30	43	3	15	15	3	$15	1	6	6	1	6
McHenry															
McLean															
Menard															
Mercer															
Monroe															
Montgomery		52					50				2	27	14	2	14
Morgan	28	355	335	21	235										
Moultrie															
Ogle															
Oregon	16	60	35	16	35		60	18		18		53			
Peoria															
Perry	8	48	21	8	21										
Piatt	15	220	150												
Pike	19	201	208	19	208										
Pope	3	15	15	3	15										
Pulaski															
Putnam															
Randolph—															
Sparta	18	80	69								2	80	13		
Randolph—															
Chester	7	73	43	7	43										
Richland															
Rock Island															
Port Byron	8	31	19	8	19										
Rock Island—															
Hillsdale	3	36	6	3	6										
Saline—															
Eldorado	10	10	[illegible]												
Sangamon	28	240	215	7	50		240				2	240		2	
Schuyler	14	96	72	14	72										
Scott															
Shelby	20	171	161	5	17										
Stark															
Toulon	28	106	100	13	39										
St Clair															
Stephenson															
Tazewell	27	179	143	27	143										
Union															
Vermilion—															
Catlin	11	107	71	11	71										
Vermilion—															
Hoopeston	50	309	286			31	309	212							
Wabash															
Warren	14	92	62	10	33										
Washington															
Wayne															
White	25	152	145	9	10		152					152			

Report of Pure-Bred Stock—Continued.

Counties.	SHORTHORN CATTLE.					HEREFORD					DEVON.				
				Owned in county					Owned in county					Owned in Co	
	Number of entries ..	Amount premiums offered	Amount premiums paid	Number of entries	Amount of premiums paid	Number of entries .	Amount premiums offered	Amount premiums paid	Number of entries	Amount of premiums paid	Number of entries .	Amount premiums offered	Amount premiums paid	Number of entries ..	Amount premiums paid
Whiteside—Sterling ..	....	$76	$66	.	..	..	$51	..	..	.	.	.		..	...
Whiteside—Morrison	26	110	106	..	.	..	..	.	.	..	.	.	..	..	..
Whiteside—Albany	10	67	50	10	$50	..	.	..	.	..	..	$25	. .	..	..
Will	.	..	......	..	..	.	..	..	.	..	..	.	.	..	..
Williamson	..	..	.	..	..	.	.			.	..	..	.		
Winnebago	20	55	42	12	26	14	55	$48	14	$48	5	55	88	5	$8
Woodford ..	26	276	191	12	65	35	151	103	..		13	102	50		
Total .	1,253	$9,071	$6,546	777	$3,523	147	$2.395	$678	36	$146	115	$1,697	$435	42	$193

Report of Pure-bred Stock—Continued.

Counties.	HOLSTEIN.					AYRSHIRE.					JERSEY.				
	Number of entries.	Amount premiums offered........	Amount premiums paid.	Owned in county		Number of entries	Amount premiums offered...... ..	Amount premiums paid....	Owned in county		Number of entries.	Amount premiums offered...	Amount premiums paid...........	Owned in county	
				No. of entries.	Am't prem's paid..... ...				No. of entries	Am't prem's paid.......				No. of entries.	Am't prem's paid... ..
Adams......	6	$169	$61	6	$61	...	...	...	...	...	3	$69	$20	3	$20
Alexander ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bond........	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Boone.......	...	49	...	...	...	...	...	...	...	...	4	49	15	4	15
Brown ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bureau ...	...	...	...	...	...	...	...	...	...	...	1	54	8	1	8
Calhoun	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carroll .. .	2	47	5	2	5	...	...	...	...	...	4	48	12	4	12
Cass.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Champaign..	...	...	...	...	...	...	...	...	...	...	1	26	5	1	5
Christian. .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Clark. ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Clay	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Clinton ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coles.	2	90	15	2	15	...	...	...	...	...	3	69	18	3	18
Cook	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Crawford ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cumberland.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
DeKalb—Sandwich	...	...	...	...	...	...	...	...	...	...	11	...	17	...	...
DeWitt ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Douglas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
DuPage....	...	...	...	...	...	...	...	...	...	...	12	55	26	...	...
Edgar....	...	...	...	...	...	...	...	...	...	...	11	54	54	11	54
Edwards .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Effingham	...	...	...	...	...	...	...	...	...	...	7	99	46	7	46
Fayette	4	56	12	4	12	...	...	...	...	...	5	56	22	5	22
Ford	14	83	74	...	...	...	...	...	...	...	11	83	54	2	...
Franklin....	...	...	...	...	...	...	...	...	...	...	1	103	5	1	5
Fulton—Canton.	...	72	...	...	...	...	$72	...	...	...	2	72	12	2	12
Fulton—Avon	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gallatin	...	...	...	...	...	...	...	...	...	...	8	84	61	3	18
Greene	...	...	...	...	...	...	...	...	...	...	2	30	20	2	20
Grundy ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hamilton. ..	...	...	...	...	...	...	...	...	...	...	16	79	71	8	43
Hancock. ..	...	...	...	...	...	...	...	...	...	...	11	21	21	27	21
Hardin	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Henderson...	1	94	6	1	6	...	...	...	...	...	...	...	...	...	...
Henry	...	...	...	...	...	2	60	$14	2	$14	...	...	...	...	...
Iroquois......	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jackson—Murph'sb'ro	...	...	...	...	...	...	...	...	...	...	...	21	...	...	...
Jackson—Carbondale	...	122	...	...	...	...	122	...	...	...	8	122	64	8	64
Jasper.......	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jefferson.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jersey	...	...	...	...	...	...	...	...	...	...	8	240	140	...	...
JoDaviess....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Johnson......	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kane...	10	81	41	10	41	...	81	...	...	...	13	81	47	13	47
Kankakee. ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kendall	...	44	...	...	...	...	...	...	...	...	...	44	...	...	...
Knox.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lake—Waukegan.	3	74	23	3	23	12	74	46	12	46	30	74	61	30	61
LaSalle.......	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lawrence ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lee	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Livingston—Fairbury ..	18	215	200	...	...	...	...	...	...	...	18	170	119	18	119
Logan—Lincoln ...	...	...	...	...	...	11	94	20	...	...	1	69	5	1	5
Logan—Atlanta	...	...	...	...	...	11	73	44	...	...	2	73	13	...	...
Macon.... ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Report of Pure-bred Stock—Continued.

Counties.	HOLSTEIN.					AYRSHIRE.					JERSEY.				
				Owned in county					Owned in county					Owned in co'nty	
	Number of entries	Amount premiums offered	Amount premiums paid	No. of entries	Am't prem's paid	Number of entries	Amount premiums offered	Amount premiums paid	No of entries	Am't prem's paid	Number of entries	Amount premiums offered	Amount premiums paid	No. of entries	Am't prem's paid
Macoupin												$30			
Madison															
Marion															
Marshall															
Mason															
Massac															
McDonough															
McHenry—Woodstock						5	$26	$26	5	$26	9	18	$18	9	$18
McHenry—Marengo															
McLean															
Menard															
Mercer															
Monroe															
Montgomery												27			
Morgan															
Moultrie															
Ogle—Oregon		$53					53					53			
Peoria															
Perry															
Piatt															
Pike															
Pope															
Pulaski															
Putnam															
Randolph—Sparta		80									15	80	51		
Randolph—Chester						17	115	86	17	86					
Richland															
Rock Island—Port Byron											1	19	3	1	3
Saline—Eldorado											12	105	85		
Sangamon		240					240				27	240	210	27	210
Schuyler											7	62	37	7	37
Scott															
Shelby											10	71	61	10	61
Stark—Toulon											13	106	81	13	81
St. Clair															
Stephenson															
Tazewell						19	179	52	19	52	23	179	61	23	61
Union															
Vermilion															
Wabash															
Warren											2	78	18	2	18
Washington															
Wayne															
White		152					152				5	152	44	1	15
Whiteside—Sterling		51					51	35			51	18			
Whiteside—Morrison		7	$81	36							2	81	6		
Whiteside—Albany							25				4	25	10	4	10
Will															
Williamson															
Winnebago											14	55	8	5	8
Woodford	15	102	90								13	102	61		
Total	75	$1881	$608	64	$163	77	$1417	$323	55	$224	401	$3446	$1700	256	$1137

Report of Pure-bred Stock—Continued.

Counties.	THOROUGHBRED HORSES.				ROADSTERS					NORMAN AND FRENCH DRAFT.					CLYDESDALE & ENGLISH DRAFT				
	No. of entries	Amount of premiums offered	Amount of premiums paid	Owned in County. Number of entries.	Owned in County. Amount of premiums paid	No of entries	Amount of premiums offered	Amount of premiums paid	Owned in County. Number of entries.	Owned in County. Amount of premiums paid.	No of entries	Amount of premiums offered	Amount of premiums paid	Owned in County. Number of entries	Owned in County. Amount of premiums paid	No. of entries	Amount of premiums offered	Amount of premiums paid	Owned in County. Number of entries.	Owned in County. Amount of premiums paid
Adams						49	$321	$321	19	$104	45	$143	$143	29	$76					
Alexander																				
Bond																				
Boone		$40														14	$40	$34	14	$34
Brown																				
Bureau						52	156	130	52	130	17	166	122	17	122					
Calhoun																				
Carroll	4	54	$22	4	$22	32	76	70	32	70	7	61	27	7	27					
Cass	32	118	81	32	81	34	118	92	34	92	12	4	47	12	47	12	74	47	12	47
Champaign	10	57	37	10	37	11	57	35	10	35	10	57	23	10	23					
Christian																				
Clark																				
Clay																				
Clinton																				
Coles						82	478	466	66	316						7	30	30	7	30
Cook																				
Crawford																				
Cumberland																				
DeKalb, Sandwich						28		183												
DeKalb, Sycamore						35	86	76	35	76	9	38	19	9	19	9	38	20	9	20
DeWitt						47	70	59	29	32										
Douglas		305	174																	
DuPage						2	17	17	2	17	4	70	9	4	9					
Edgar																3	75	75	1	
Edwards																				
Effingham	5	96	32	5	32															
Fayette	1			1																
Ford	8	69	40	3	12	19	81	73	14	15										
Franklin	7	91	46	6	38	11	30	30	7	18	16	91	76	5	25					
Fulton, Canton	8					53	132	61	53	61	31	156	70	31	70					
Fulton, Avon																				
Gallatin	19	150	115	7	40	54	375	270	30	185	7	124	31	1						
Greene	9	101	55	9	55	41	104	91	34	72	22	114	98	22	98					
Grundy																				

Hamilton	9	80	34	4	5															
Hancock	2			2																
Hardin																				
Henderson											23					18				
Henry											15	135	91	15	91					
Iroquois	9	35	21			15	85	41	15	41	17	80	43	17	43	4	40	18	4	18
Jackson, Murphysboro		102																		
Jackson, Carbondale	1	30	10																	
Jasper																				
Jefferson																				
Jersey	3	30	30	1		79	220	190	36	90										
JoDaviess, Galena						7	20	18	7	18	16	90	50	16	50					
JoDaviess, Warren						14	510	275	20	30						32	106	72	9	23
Johnson																				
Kane																				
Kankakee	3	54	15			3	58	15												
Kendall	1	36	6	1	6	49	389	371	47	280						9	54	24	9	24
Knox	6	78	30	6	30	25	450	350	20	250										
Lake, Waukegan							123	68	35	68	1	81	10			9	81	44	8	34
LaSalle																				
Lawrence																				
Lee																				
Livingston, Fairbury	10	138	50			55	154	124	55	124	85	252	222	75	196	20	252	54	15	40
Logan, Lincoln	18	116	33	2		76	113	53	52	25										
Logan, Atlanta						49	89	87			10	85	23							
Macon																				
Macoupin		70				59	158	155	21	30										
Madison																				
Marion																				
Marshall																				
Mason	3	83	10	3	10															
Massac																				
McDonough																				
McHenry, Woodstock						33	63	63	31	49						6	31	31	6	31
McLean																				
Menard																				
Mercer																				
Monroe																				
Montgomery						2	150	40	2	40										
Morgan	5	120	37	4	31	70	2,562	1,992	19	200										
Moultrie																				
Ogle, Oregon	6	77	19	2	11	16	77	50	16	50	4	77	9	2	9					
Peoria																				
Perry	2	95	25	1	15	5	35	22	3	10										
Piatt	3	30	25			26	75	68	12	20						16	85	74	8	40
Pike	5	45	45			17	420	360	11	309										
Pope																				
Pulaski																				
Putnam																				
Randolph, Sparta	2	13	13			13	55	55								40	137	124		
Randolph, Chester	1	50	20	1	20	2	64	23	2	23										
Richland																				

Report of Pure-bred Stock—Continued.

Counties.	THOROUGHBRED HORSES.					ROADSTERS.					NORMAN AND FRENCH DRAFT					CLYDESDALE & ENG. DRAFT.				
				Owned in County.					Owned in County.					Owned in County					Owned in County.	
	No. of entries ..	Amount of premiums offered.	Amount of premiums paid	Number of entries.	Amount of premiums paid	No. of entries...	Amount of premiums offered ..	Amount of premiums paid	umber of entries ...	Amount of premiums paid	No of entries ..	Amount of premiums offered ..	Amount of premiums paid	Number of entries ...	Amount of premiums paid......	No. of entries ..	Amount of premiums offered...	Amount of premiums paid......	Number of entries....	Amount of premiums paid .. ..
Rock Island, Port Byron..											13	16	16	9	10	12	15	15	9	10
Rock Island, Hillsdale	11	$113	$29	9	$23	7	$50	$16	7	$16	2	33	6			2	30	7	2	7
Saline, Eldorado..........	11	170	110																	
Sangamon	50	195	185	34	165	64	205	190	42	140	18	195	60	37	140	20	195	85		
Schuyler...............	4	110	10	1		43	110	107	22	35										
Scott																				
Shelby											2	127	18	2	18					
Stark, Toulon						30	324	298	27	287										
St. Clair																				
Stephenson																				
Tazewell	4	101	25			34	101	91	29	39	20	101	47	18	37					
Union																				
Vermilion, Catlin.........						27	57	57	27	57						42	135	125	42	125
Vermilion, Danville........																				
Vermilion, Hoopeston. ..						82	186	168	30	45	62	95	80	34	36	66	95	91		
Wabash																				
Warren	3	38	33	3	33	31	168	129	8	103						22	168	142	22	142
Washington																				
Wayne																				
White	7	170	55	1	20	25	130	87	10	35	47	180	125	13	43					
Whiteside, Sterling.......												33	33							
Will																				
Williamson																				
Winnebago	15	68	57	15	57	66	68	59	66	59	18	68	50	18	50					
Woodford	8	100	42			44	701	472	22	42	10	124	40	10	40					
Total	305	$3,428	$1,571	167	$743	1638	$10,071	$8,068	1111	$3,738	543	$2,796	$1,588	413	$1,279	363	$1,681	$1,112	177	$625

Report of Pure-bred Stock—Continued.

Counties.	COTSWOLD SHEEP.					LEICESTER AND OTHER LONG WOOLS					SOUTHDOWN.				
	No of entries	Amount premiums offered	Amount premiums paid	Owned in county: Number of entries	Owned in county: Amount of premiums paid	No. of entries	Amount premiums offered	Amount premiums paid	Owned in county: Number of entries	Owned in county: Amount of premiums paid	No of entries	Amount premiums offered	Amount premiums paid	Owned in county: Number of entries	Owned in county: Amount of premiums paid
Adams	37	$50	$50	37	$50	...	...	...	...	...	14	$50	$50	14	$50
Alexander	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bond	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Boone	...	...	...	...	...	6	$23	$11	1	$3	...	...	...	...	...
Brown	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bureau	...	...	...	...	...	61	240	172	61	172	...	...	...	...	...
Calhoun	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Carroll	15	27	27	...	...	...	...	...	...	...	9	27	20	...	...
Cass	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Champaign	...	...	...	...	...	18	24	22	11	22	...	...	...	...	...
Christian	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Clark	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Clay	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Clinton	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coles	...	...	...	...	...	6	29	18	6	18	1	29	5	1	5
Cook	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Crawford	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cumberland	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
DeKalb—Sandwich	...	...	...	...	...	19	...	...	...	...	22	...	32	...	...
DeKalb—Sycamore	...	...	...	...	...	10	30	21	10	21	...	...	...	...	...
DeWitt	8	21	15	...	...	...	...	...	...	...	8	21	17	5	12
Douglas	...	...	...	...	...	13	...	...	...	...	...	...	...	...	...
DuPage	...	...	...	...	...	4	22	12	...	...	...	...	...	...	...
Edgar	...	...	...	...	...	5	15	15	5	15	2	15	15	2	15
Edwards	11	27	20	11	20	...	...	...	...	...	2	27	6	2	6
Effingham	3	4	11	3	11	...	...	...	...	...	1	33	5	1	5
Fayette	15	27	25	15	25	...	...	...	...	...	...	...	...	...	...
Ford	...	...	...	...	...	7	18	15	4	8	...	...	...	...	...
Franklin	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fulton—Canton	...	...	...	...	...	20	38	31	8	10	...	...	...	...	...
Fulton—Avon	...	...	...	...	...	11	18	16	...	...	...	...	...	...	...
Gallatin	3	24	10	1	2	...	...	...	...	...	1	24	3	1	3
Greene	...	...	...	...	...	22	38	38	22	38	...	...	...	...	...
Grundy	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hamilton	...	...	...	...	...	10	20	17	1	...	7	20	12	2	7
Hancock	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hardin	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Henderson	5	13	5	3	5	8	13	8	4	5	...	...	...	...	...
Henry	12	30	27	12	27	...	...	...	...	...	6	30	21	6	21
Iroquois	...	...	...	...	...	9	24	20	9	20	...	...	...	...	...
Jackson—Murphysb.	...	...	...	...	...	5	17	13	5	13	...	...	...	...	...
Jackson—Carbondale	14	40	34	3	3	...	40	...	...	...	...	40	...	...	...
Jasper	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jefferson	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jersey	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
JoDaviess—Galena	10	24	16	10	16	7	24	10	7	10	...	...	...	...	...
JoDaviess—Warren	...	...	...	...	...	6	24	20	2	6	...	...	...	...	...
Johnson	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kane	...	...	...	...	...	8	36	28	3	10	...	...	...	...	...
Kankakee	12	34	32	12	32	...	...	...	...	...	11	34	24	11	24
Kendall	13	24	21	13	21	...	...	...	...	...	...	...	...	...	...
Knox	100	90	50	80	30	40	33	25	40	25	...	...	...	...	...
Lake—Waukegan	6	45	26	6	26	10	45	41	10	41	9	45	38	9	38
LaSalle	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lawrence	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Lee	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Report of Pure-bred Stock—Continued.

Counties.	COTSWOLD SHEEP					LEICESTER AND OTHER LONG WOOLS.					SOUTHDOWN				
	No. of entries ...	Amount premiums offered....	Amount premiums paid......	Owned in county: Number of entries..	Owned in county: Amount of premiums paid......	No. of entries ...	Amount premiums offered ..	Amount premiums paid	Owned in county: Number of entries..	Owned in county: Amount of premiums paid......	No. of entries ...	Amount premiums offered....	Amount premiums paid......	Owned in county: Number of entries..	Owned in county: Amount of premiums paid......
Livingston—Fairbury	5	$54	$18	5	$18						14	$46	$33	14	$33
Logan—Lincoln ...						33	$41	$21	21	$6					
Logan—Atlanta ...						15	18	18							
Macon															
Macoupin ...						27	56	56	19	30	11	56	48	11	48
Madison......															
Marion															
Marshall ...															
Mason															
Massac															
McDonough															
McHenry—Woodstock	8	18	18	8	18	6	25	25			5	23	23	5	23
McLean															
Menard															
Mercer															
Monroe															
Montgomery						1	28	3	1	3		10			
Morgan	53	108	108	53	108						15	108	108	15	108
Moultrie															
Ogle—Oregon ...						10	18	16	10	16	5	18	18	5	18
Peoria......															
Perry......															
Piatt															
Pike	16	124	76	16	76										
Pope........															
Pulaski															
Putnam															
Randolph—Sparta	14	29	25								13	24	16		
Randolph—Chester....	5	94	26	5	26										
Richland ..															
Rock Island—Port Byron	4	12	8	4	8										
Rock Island—Hillsdale	5	16	12	5	11										
Saline—Eldorado .	10	14	23	3	8										
Sangamon						13	78	64	13	64					
Schuyler . ..						24	30	30	24	30	5	30	14	5	14
Scott															
Shelby						11	28	26	11	26					
Stark—Toulon ...						24	46	46	24	46	10	46	30	10	30
St. Clair															
Stephenson															
Tazewell						16	35	29	16	29					
Union															
Vermilion—Danville ...						9	42	30	9	30					
Vermilion.. .															
Vermilion—Hoopeston.						38	35	32	34	14					
Wabash															
Warren......						10	45	38	7	38					
Washington															
Wayne															
White		28				4	28	13	4	13		28			
Whiteside—Sterling ...		33	29									33			

Report of Pure-bred Stock—Continued.

Counties.	Cotswold Sheep.					Leicester and Other Long Wools					Southdown.				
	No. of entries	Amount premiums offered ..	Amount premiums paid	Owned in county. Number of entries	Owned in county. Amount of premiums paid .	Number of entries	Amount of premiums offered	Amount of premiums paid ..	Owned in county Number of entries	Owned in county Amount of premiums paid	Number of entries	Amount of premiums offered	Amount of premiums paid ..	Owned in county. Number of entries	Owned in county. Amount of premiums paid.
Whiteside—Morrison	..	......	......	..	.....	17	$30	$25	..	.....	..	....	......	.	......
Whiteside—Albany .	..	......	....	..	......	2	6	3	2	$3	.	$6	......	..	......
Will	..	......	......	..	.....	...	......	.....	..	....	.	....	. .	..	......
Williamson	..	......	......	..	....	..	......	......	...	.....	.	...	.....	..	.....
Winnebago	..	.....	.....	..	.....	29	22	20	17	9	.	.....	. .	..	.. ..
Woodford...	...	.... .	... ..	..	.....	2	31	7	2	7	10	34	$24	10	$24
Total ..	384	$1,020	$712	305	$542	596	$1,416	$1,055	423	$801	181	$857	$562	129	$484

Report of Pure-bred Stock—Continued.

Counties.	Oxford and other Downs.					American Merinos.					Spanish Merino and other Fine Wools.				
	Number of entries	Amount of premiums offered....	Amount of premiums paid......	Owned in county.		Number of entries	Amount of premiums offered....	Amount of premiums paid......	Owned in county.		Number of entries	Amount of premiums offered....	Amount of premiums paid.......	Owned in county.	
				Number of entries..	Amount of premiums paid.....				Number of entries.	Amount of premiums paid.....				Number of entries.	Amount of premiums paid.....
Adams						17	$50	$50	11	$22					
Alexander															
Bond															
Boone	6	$22	$13	6	$13						10	$23	$8	10	$8
Brown															
Bureau															
Calhoun															
Carroll						3	27	10	3	10					
Cass															
Champaign.	9	24	15	9	15						3	24	15	3	15
Christian.															
Clark															
Clay.															
Clinton															
Coles.						10	29	29							
Cook															
Crawford															
Cumberland															
DeKalb—Sandwich	5														
DeKalb—Sycamore.						8	30	18							
DeWitt											6	21	9	5	9
Douglas												13			
DuPage											10	22	22		
Edgar						2	15	15	2	15					
Edwards											6	27	12	6	12
Effingham.															
Fayette						6	27	8	6	8					
Ford											2	18	10		
Franklin											3	26	11	3	11
Fulton—Canton.	14	38	27	14	27						17	38	28	17	28
Fulton—Avon	3	18	8								8	18	14		
Gallatin						1	24	3	1	3					
Greene	17	38	32	17	32										
Grundy															
Hamilton						8	20	14	2	3					
Hancock						7	6	6	7	6					
Hardin															
Henderson											2	13	3	2	3
Henry						6	30	25	6	25					
Iroquois															
Jackson—Murph'sb'ro											5	17	15	5	15
Jackson—Carbondale	2	40	9	2	9	1	40	5				40			
Jasper															
Jefferson															
Jersey	57	198	183	14	14										
JoDaviess															
Johnson															
Kane						2	36	5	2	5	18	36	36	18	36
Kankakee						4	34	15	4	15					
Kendall															
Knox															
Lake—Waukegan						31	45	45	31	45					
LaSalle.															
Lawrence															
Lee															
Livingston—Fairbury						4	42	17	4	17					
Logan—Lincoln	24	41	19	18	8						13	40	19	13	19

Report of Pure-bred Stock—Continued.

Counties	Oxford and Other Downs.					American Merinos.					Spanish Merino and Other Fine Wools				
	Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in county.		Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in county		Number of entries	Amount of premiums offered	Amount of premiums paid	Owned in county	
				Number of entries	Amount of premiums paid				Number of entries	Amount of premiums paid				Number of entries	Amount of premiums paid
Logan—Atlanta											8	$18	$18		
Macon															
Macoupin											10	56	50		
Madison															
Marion															
Marshall															
Mason															
Massac															
McDonough															
McHenry—Woodstock											23	48	48	23	48
McLean															
Menard															
Mercer															
Monroe												28			
Montgomery															
Morgan															
Moultrie															
Oglo—Oregon	5	$18	$7	5	$7						1	18	2	1	2
Peoria															
Perry															
Piatt															
Pike															
Pope															
Pulaski															
Putnam															
Randolph—Sparta						8	$29	$11							
Richland															
Rock Island															
Saline—Eldorado	7	24	21												
Sangamon	26	78	75	26	75						2	78	15	2	15
Schuyler															
Scott															
Shelby						12	28	28	12	$28	15	28	26	15	26
Stark—Toulon											2	46	9	2	9
St. Clair															
Stephenson															
Tazewell											15	35	35	1	
Union															
Vermilion—Catlin						25	42	42	25	42					
Vermilion															
Vermilion—Hoopeston						24	35	29							
Wabash															
Warren											8	45	38	8	38
Washington															
Wayne															
White	21	28	27	12	17		28				10	28	26		
Whiteside—Sterling		33													
Whiteside—Morrison	19	30	25								12	30	19		
Whiteside—Albany												6			
Will															
Williamson															
Winnebago	35	22	22	31	18						8	22	14		
Woodford						9	51	22	9	22					
Total	250	$652	$483	154	$235	188	$668	$397	125	$266	217	$862	$502	134	$294

Report of Pure-bred Stock—Continued.

Counties	BERKSHIRE SWINE.					POLAND CHINA.					CHESTER WHITE.				
				Owned in county					Owned in county					Owned in county	
	No. of entries ...	Amount premiums offered...	Amount premiums paid....	Number of entries ..	Amount of premiums paid..	No. of entries ..	Amount premiums offered ..	Amount premiums paid....	Number of entries ..	Amount of premiums paid..	No. of entries ..	Amount premiums offered...	Amount premiums paid.....	Number of entries....	Amount of premiums paid....
Adams	20	$87	$87	...	......	57	$87	$87	27	$34	....	......	......	....	......
Alexander....	....	......	......	..	......	..	......	......	...	......	..	......	......	....	......
Bond	....	......	......	..	......	..	......	......	..	......	..	......	......	....	......
Boone	13	37	13	13	$13	16	37	21	16	21	3	$37	$7	3	$7
Brown........	....	......	......	..	......	..	......	......	..	......	..	......	......	....	......
Bureau	..	......	......	..	......	36	59	54	36	54	8	59	24	8	24
Calhoun......	....	......	......	..	......	..	......	......	..	......	..	......	......	....	......
Carroll..	7	38	21	7	21	11	40	30	11	30	8	40	20	8	20
Cass	...	40	......	..	......	..	40	......	...	......	7	56	21	...	......
Champaign ..	21	30	25	11	11	29	30	28	29	28	....	......	......	...	......
Christian. ...	....	......	......	..	......	..	......	......	...	......	....	......	......	...	......
Clark	...	......	......	..	......	..	......	......	...	......	..	......	......	...	......
Clay	..	......	....	...	......	..	....	....	...	......	...	......	......	...	......
Clinton	..	......	......	..	......	..	......	......	...	......	..	......	......	...	......
Coles	10	84	48	..	......	27	84	80	27	80	..	......	......	..	......
Cook	...	......	......	..	......	..	......	......	...	......	..	......	......	...	......
Crawford. ..	..	......	......	..	......	..	......	......	..	......	..	......	......	..	......
Cumberland.	....	......	......	..	....	..	......	......	...	......	..	......	......	..	......
DeKalb— Sandwich ..	16	......	15	...	......	2	......	......	..	......	..	......	......	...	......
DeKalb— Sycamore	18	39	14	18	14	48	39	38	20	17	..	......	......	...	......
DeWitt	..	48	......	...	......	...	....	......	..	......	..	......	......	...	......
Douglas	....	36	14	...	......	..	36	28	..	......	..	......	......	..	......
DuPage ...	..	......	......	..	......	3	20	11	..	......	1	20	5	..	......
Edgar . ..	18	81	66	18	66	14	81	73	14	73	..	......	......	..	......
Edwards ...	10	55	38	10	38	21	55	49	21	49	..	......	......	..	......
Effingham ...	9	73	35	9	35	8	73	20	8	20	2	73	12	2	12
Fayette	16	21	7	16	7	1	21	4	1	4	...	......	......	..	......
Ford	10	56	34	8	26	40	54	58	26	29	7	48	34	..	......
Franklin....	..	......	......	...	......	6	35	18	6	18	...	......	......	...	......
Fulton— Canton	1	66	5	1	5	53	66	40	53	40	..	66	......	...	......
Fulton— Avon	8	57	29	...	......	24	60	52	....	......	12	57	35	...	......
Gallatin	3	59	11	3	11	1	59	5	1	5	3	59	10	3	10
Greene	....	......	......	...	......	7	60	35	....	......	16	60	55	7	20
Grundy	...	......	......	..	......	...	......	......	...	......	..	......	......	..	......
Hamilton.....	11	30	25	5	11	11	30	26	3	6	...	30	......	...	......
Hancock.	9	5	5	9	5	11	12	12	11	12	..	......	......	..	......
Hardin	...	......	......	...	......	...	......	....	..	......	...	......	......	..	......
Henderson ..	14	42	19	8	12	12	42	26	7	12	...	......	......	...	......
Henry	...	42	......	...	......	10	42	40	5	7	18	42	42	18	42
Iroquois......	6	40	25	6	25	35	40	30	35	30	..	......	......	..	......
Jackson— Murph'sb'ro	2	15	2	2	2	...	15	......	..	......	1	15	2	1	2
Jackson— Carbondale.	13	47	24	....	......	12	47	32	..	......	....	47	......	...	......
Jasper.	...	......	......	..	......	..	......	......	..	......	...	......	......	...	......
Jefferson.....	...	......	......	...	......	...	......	......	...	......	...	......	......	...	......
Jersey	...	......	......	....	......	...	......	......	...	......	...	......	......	...	......
JoDaviess— Galena ...	8	38	30	8	30	6	38	21	6	21	....	38	......	...	......
JoDaviess— Warren....	...	......	......	....	....	4	17	14	2	14	5	17	14	4	14
Johnson.....	...	......	......	...	......	..	......	......	...	......	...	......	......	...	......
Kane	13	40	29	13	29	5	40	12	5	12	...	40	......	...	......
Kankakee....	....	......	......	...	....	23	60	42	23	42	3	50	12	3	12
Kendall	8	27	27	8	27	17	27	21	17	21	..	27	......	...	......
Knox..	20	50	30	20	30	....	......	......	....	......	20	50	30	20	30
Lake— Waukegan.	1	45	5	1	5	1	45	6	1	6	12	45	32	12	32
LaSalle.......	....	......	......	...	......	...	......	....	...	......	...	......	......	...	......
Lawrence	..	......	......	...	......	...	......	......	...	......	...	......	......	...	......
Lee	....	......	......	....	......	....	......	......	....	......	....	......	......	...	......

Report of Pure-bred Stock—Continued.

Counties.	BERKSHIRE SWINE.					POLAND CHINA.					CHESTER WHITE.				
				Owned in county					Owned in county					Owned in county	
	No. of entries....	Amount premiums offered....	Amount premiums paid........	Number of entries....	Amount of premiums paid....	No. of entries....	Amount premiums offered....	Amount premiums paid.....	Number of entries....	Amount of premiums paid	No of entries....	Amount premiums offered .	Amount premiums paid	Number of entries....	Amount of premiums paid.....
Livingston—Fairbury . .	8	$40	$29	2	$2	22	$48	$18	11	$20	...	...	...	...	...
Logan—Lincoln ...	9	70	21	9	21	21	70	21	18	20	...	...	...	...	...
Logan—Atlanta	5	42	14	...	...	13	42	31	...	...	16	$42	$40	...	...
Macon........	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Macoupin ...	10	58	55	19	55	17	38	38	7	26	...	...	...	...	...
Madison	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Marion.......	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Marshall.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mason	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Massac	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
McDonough .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
McHenry—Woodstock	6	11	11	6	11	17	22	22	17	22	...	...	...	...	...
McLean	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Menard	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mercer.......	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Monroe	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Montgomery	2	23	10	2	10	2	23	13	2	13	...	23	...	...	...
Morgan	34	99	99	17	40	21	99	99	6	18	16	99	94	15	$86
Moultrie	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ogle—Oregon.....	...	12	...	...	...	3	12	6	3	6	2	12	...	...	...
Peoria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Perry.........	6	73	13	6	13	...	...	...	...	...	...	...	...	...	...
Platt.	10	40	38	10	38	8	40	28	...	...	...	...	...	...	...
Pike.	...	...	...	...	...	12	198	43	12	43	...	...	...	...	...
Pope	...	...	...	...	...	...	...	...	...	...		...	...	...	...
Pulaski	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Putnam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Randolph—Sparta.. ..	2	43	5	...	...	5	43	15	...	...	3	43	11	...	...
Randolph—Chester....	4	136	37	4	37	...	...	...	...	...	...	...	...	...	...
Richland ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rock Isl'nd—Port Byron	3	29	6	3	6	11	29	20	11	20	7	29	16	...	...
Rock Isl'nd—Hillsdale..	3	30	6	3	6	19	42	29	19	29	...	30	...	...	...
Saline—Eldorado .	8	32	25	2	8	9	32	24	1	5	...	...	...	...	...
Sangamon..	29	105	90	8	15	30	105	105	16	65	33	105	105	...	...
Schuyler.....	23	66	63	12	25	15	66	56	...	...	...	...	...	...	...
Scott.........	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shelby.......	15	44	34	15	34	2	44	12	2	12	...	...	...	...	...
Stark—Toulon	12	36	36	12	36	44	36	36	44	36	10	36	32	10	32
St. Clair	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stephenson .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tazewell	16	75	40	16	40	59	75	69	51	53	17	75	53	6	13
Union ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vermilion—Catlin	12	46	43	12	43	...	...	...	...	...	...	...	...	...	...
Vermilion .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vermilion—Hoopeston.	30	81	37	1	3	67	81	66	30	20	10	17	17	10	17
Wabash	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Warren	17	90	85	12	50	28	90	90	7	45	...	...	...	...	...
Washington ,	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wayne.......	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
White	2	33	7	2	7	6	33	17	6	17	4	33	11	4	11
Whiteside—Morrison...	11	34	28	...	...	17	34	30	...	...	17	34	32	...	...

Report of Pure-bred Stock—Continued.

Counties.	BERKSHIRE SWINE					POLAND CHINA					CHESTER WHITE.				
	Number of entries.	Amount premiums offered	Amount premiums paid.	Owned in county No. of entries.	Owned in county Am't prem's paid	Number of entries.	Amount premiums offered	Amount premiums paid	Owned in county No of entries	Owned in county Am't prem's paid	Number of entries.	Amount premiums offered.	Amount premiums paid.	Owned in county No. of entries.	Owned in county Am't prem's paid.
Whiteside—Albany	2	$12	$4	2	$4	9	$12	$11	9	$11	..	$12	.....		....
Will	..	...	....	..	.. ..	..	.....	....	..	.....	..	.....	....	.	.....
Williamson	..	.....	.....	..	....	.	....	....		. .	..	.	.....		......
Winnebago	13	36	27	2	9	17	36	29	17	29	.	...	..		.....
Woodford.	9	34	17	9	17	17	34	29	17	29		34	....		. ...
Total.	586	$2,758	$1,563	380	$954	1042	$2,875	$1,900	717	$1,224	261	$1,600	$766	134	$384

Report of Pure-bred Stock—Continued.

Counties.	Essex.					Suffolk.					Small Yorkshire.				
	No. of entries	Amount premiums offered	Amount premiums paid	Owned in county		No. of entries	Amount premiums offered	Amount premiums paid	Owned in county		No of entries	Amount premiums offered	Amount premiums paid	Owned in county	
				No. of entries.	Am't pr'mium paid				No. of entries.	Am't pr'mium paid				No of entries.	Am't pr'mium paid
Adams															
Alexander															
Bond															
Boone							$41								
Brown															
Bureau	7	$59	$30	7	$30										
Calhoun															
Carroll															
Cass															
Champaign															
Christian															
Clark															
Clay															
Clinton															
Coles															
Cook															
Crawford															
Cumberland															
DeKalb															
DeWitt															
Douglas															
DuPage	4	20	16												
Edgar															
Edwards															
Effingham	7	75	36	7	36										
Fayette															
Ford															
Franklin															
Fulton															
Gallatin															
Greene															
Grundy															
Hamilton															
Hancock															
Hardin															
Henderson															
Henry															
Iroquois															
Jackson—Carbondale		47					47								
Jasper															
Jefferson															
Jersey															
JoDaviess															
Johnson															
Kane	3	40	12	3	12	2	40	$6	2	$6					
Kankakee															
Kendall		27													
Knox															
Lake—Waukegan		45				6	45	18	6	18					
LaSalle															
Lawrence															
Lee															
Livingston															
Logan															
Macon															
Macoupin															
Madison															
Marion															
Marshall															
Mason															
Massac															
McDonough															
McHenry															
McLean															
Menard															

Report of Pure-bred Stock—Continued.

Counties.	ESSEX.					SUFFOLK.					SMALL YORKSHIRE.				
	Number of entries	Amount premiums offered	Amount premiums paid	Owned in county		Number of entries	Amount premiums offered	Amount premiums paid	Owned in county		Number of entries	Amount premiums offered	Amount premiums paid	Owned in county	
				Number of entries	Amount of premiums paid				Number of entries	Amount of premiums paid				Number of entries	Amount of premiums paid
Mercer	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Monroe	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Montgomery	...	$23	...	...	...	...	$23	...	...	...	...	...	...	...	...
Morgan	15	99	$75	15	$75	...	...	...	...	...	...	...	...	...	...
Moultrie	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ogle	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peoria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Perry	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Piatt	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pike	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pope	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulaski	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Putnam	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Randolph—Sparta	6	43	20	...	...	1	43	$6	...	...	...	$43	...	...	...
Richland	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rock Island—Port Byron	...	29	...	...	...	...	...	...	...	...	...	...	...	...	...
Saline—Eldorado	2	32	8	2	8	...	...	...	...	...	...	...	...	...	...
Sangamon	...	...	...	...	...	12	105	85	...	...	...	...	...	...	...
Schuyler	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Scott	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shelby	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stark—Toulon	1	36	6	1	6	...	...	...	...	...	...	...	...	...	...
St Clair	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Stephenson	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tazewell	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Union	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Vermilion—Catlin	6	46	26	6	26	...	...	...	...	...	...	...	...	...	...
Wabash	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Warren	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Washington	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wayne	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
White	...	33	...	...	...	4	33	8	4	$8	...	33	...	...	...
Whiteside	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Will	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Williamson	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Winnebago	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Woodford	...	34	...	...	...	...	34	...	...	...	...	...	...	...	...
Total	51	$688	$229	41	$193	25	$411	$123	12	$32	...	$76	...	...	...

AGRICULTURAL STATISTICS FOR 1880,

AS RETURNED BY ASSESSORS MAY 1881

Counties	Corn		Winter Wheat		Spring Wheat	
	Acres	Bushels produced	Acres	Bushels produced	Acres	Bushels produced
Adams	84 493	2 364 383	88 246	1 344 685	192	3 026
Alexander	6 488	200 295	6 853	93 230		
Bond						
Boone	31 352	1 237 595	2 324	35 969	1 729	19 745
Brown	30 923	733 803	27 968	424 485	30	350
Bureau	184 872	6 952 859	3 685	24 845	10 738	82 446
Calhoun	11 645	320 800	20 108	372 082		
Carroll	63 902	2 571 131	14 551	130 798	2 346	16 116
Cass	37 354	1 361 790	18 862	326 269	1 731	19 045
Champaign	192 848	6 491 034	31 417	526 276	249	2 322
Christian	124 059	5 134 120	87 450	1 911 403	492	8 246
Clark	39 699	913 429	51 600	641 965		
Clay	40 861	514 108	40 730	444 497	8	100
Clinton	44 175	803 784	87 823	1 547 602		
Coles	62 658	1 965 581	27 410	507 225	145	2 385
Cook	40 052	1 652 705	174	2 535	2 422	24 098
Crawford	32 776	809 104	47 870	614 641		
Cumberland	25 022	478 118	37 353	311 985		
DeKalb	112 304	4 166 334	747	6 433	2 768	16 690
DeWitt	82 779	2 714 108	12 276	192 221	1 901	18 209
Douglas	67 072	2 728 093	17 552	310 426	441	6 590
DuPage	38 237	1 465 793	511	5 974	2 148	21 136
Edgar	83 318	3 403 629	52 482	714 514	758	10 444
Edwards	17 164	435 922	27 418	349 984	22	180
Effingham	41 434	768 775	45 211	501 085	28	423
Fayette	47 973	679 594	62 129	933 373	8	170
Ford	122 819	3 432 546	932	6 688	112	2 044
Franklin						
Fulton	102 386	3 645 8[illegible]0	37 876	681 010	6 731	73 252
Gallatin	25 601	400 148	31 027	235 434	22	199
Greene	53 035	1 829 800	62 653	1 452 793	68	1 727
Grundy	90 157	2 733 627	309	4 739	106	1 886
Hamilton	20 517	346 375	31 568	259 899		
Hancock	103 621	3 969 899	29 250	877 415	5 679	66 489
Hardin	5 987	109 621	4 321	33 201	10	95
Henderson	66 707	2 491 3[illegible]	6 587	66 380	6 794	63 589
Henry	191 348	7 181 065	804	4 479	4 151	27 830
Iroquois	226 040	5 402 489	9 503	100 363	523	5 404
Jackson	23 787	522 732	48 857	596 938	58	1 870
Jasper	33 766	795 140	35 266	484 595		
Jefferson	37 221	577 016	63 456	678 633		
Jersey						
JoDaviess	54 619	1 915 256	8 054	100 099	2 875	28 407
Johnson	17 584	399 467	20 644	151 318	18	146
Kane	53 480	2 350 877	282	3 299	1 345	13 892
Kankakee	96 778	247 360	3 677	37 777	1 238	11 786
Kendall	74 011	3 068 086	138	1 685	1 021	8 332
Knox	141 904	4 987 208	8 350	100 372	3 181	29 018
Lake	25 668	1 451 722	552	9 224	2 549	33 188
LaSalle	262 817	8 995 086	2 869	26 914	6 117	21 079
Lawrence	28 887	700 470	50 023	618 756		
Lee	151 194	5 541 123	3 820	31 120	8 715	42 890
Livingston	255 487	5 837 085	1 905	13 775	579	2 035
Logan	151 730	6 883 425	27 626	592 382	1 002	12 463
Macon	127 840	5 086 403	39 899	719 712	608	9 262
Macoupin	94 391	3 371 667	119 372	2 594 848	41	1 019
Madison	83 500	2 752 100	139 750	3 374 300		

Agricultural Statistics, 1880—Continued.

Counties	Corn		Winter Wheat		Spring Wheat	
	Acres	Bushels produced	Acres	Bushels produced	Acres	Bushels produced
Marion	35 210	494 367	52 308	732 345		
Marshall	67 615	2 562 641	1 020	13 697	437	1 400
Mason						
Massac	12 022	276 230	18 008	142 074		
McDonough	96 870	3 375 195	18 333	301 069	12 120	125 249
McHenry	57 627	2 213 575	1 696	25 264	7 143	88 822
McLean	249 30[illegible]	7 898 130	13 405	178 780	1 995	12 091
Menard	67 049	2 421 470	28 001	448 016	1 064	10 640
Mercer	103 986	4 189 932	2 269	22 824	8 804	68 447
Monroe	17 947	553 620	61 143	1 231 932		
Montgomery	96 189	2 652 197	108 900	2 272 613	20	320
Morgan	80 293	3 211 720	61 178	1 223 146	2 004	33 169
Moultrie	56 298	1 929 005	22 195	386 331	128	2 380
Ogle	118 312	4 583 078	12 295	195 496	3 851	31 371
Peoria	94 455	3 649 341	7 993	109 452	1 512	13 877
Perry	12 891	201 765	37 830	428 144	12 774	140 514
Piatt	64 207	2 254 498	13 273	245 059	508	11 979
Pike	70 009	2 112 752	115 151	2 075 637	13	234
Pope	20 160	449 898	19 619	140 334		
Pulaski	11 885	475 400	11 112	111 120		
Putnam	29 540	749 640	728	11 613	1 935	9 492
Randolph	22 145	135 662	80 892	1 301 678		
Richland	25 139	369 192	40 748	544 845		
Rock Island	59 414	2 450 788	296	3 528	4 719	29 892
Saline	22 360	362 994	25 102	233 643		
Sangamon	123 842	4 806 432	54 794	1 027 393	964	12 124
Schuyler	44 891	1 001 192	32 796	506 876	811	8 136
Scott	27 600	1 025 375	28 040	593 980		
Shelby	97 587	3 257 082	65 257	1 107 138	3 895	42 855
Stark	69 289	2 589 161	399	4 302	789	2 004
St Clair	50 000	2 057 079	166 517	4 049 369	145	2 285
Stephenson	78 978	3 129 210	15 059	199 958	8 452	70 722
Tazewell	113 230	4 657 937	27 080	490 486	2 343	14 390
Union	19 941	698 256	26 081	287 999	102	643
Vermilion	141 977	5 353 339	50 021	929 113	634	10 935
Wabash	14 800	387 280	28 289	330 147		
Warren	128 933	5 127 943	2 368	21 521	5 154	30 863
Washington	28 801	329 060	85 377	1 403 987	29	490
Wayne	38 221	606 459	59 079	571 117		
White	39 258	733 115	53 929	564 297	374	2 065
Whiteside	118 795	4 133 526	1 670	9 833	6 230	31 831
Will	127 825	4 218 780	2 206	15 231	1 966	24 222
Williamson	42 006	720 339	45 788	410 178		
Winnebago	76 316	4 897 945	4 683	66 978	3 059	38 051
Woodford	111 280	3 404 165	6 271	69 950	3 351	7 116
Total	7 257 897	240 949 582	3 117 379	50 671 823	179 024	1 587 228

Agricultural Statistics, 1880—Continued.

Counties.	OATS.		RYE		BARLEY.	
	Acres.	Bushels produced	Acres.	Bushels produced	Acres.	Bushels produced.
Adams	23,549	845,813	557	9,499	4	
Alexander	321	11,692	12	110		
Bond						
Boone	28.106	1,004,924	1,378	14,796	637	9,142
Brown	5,387	132,084	371	4,909		
Bureau	33,753	1,320,977	1,925	28,814	1,282	17,271
Calhoun	1,018	21,485	6	30		
Carroll	28,620	987,323	4,371	40,396	3,786	79,655
Cass	5,754	168,094	223	2,146	13	415
Champaign	38,109	1,108,845	2,544	36,574	18	353
Christian	16,577	544,331	307	4,834	212	5,040
Clark	8,360	137,709	111	1,292		
Clay	9,242	191,789	275	2,001	41	393
Clinton	16,506	297,191	58	850	25	850
Coles	10,252	297,490	174	2,435	146	2,452
Cook	54,800	1,979.265	752	11,881	218	5,871
Crawford	5,717	85,152	63	513	8	330
Cumberland	6,453	137,460	100	1,128		
DeKalb	49,172	1,900,538	1,025	10,769	1,705	29,090
DeWitt	15,208	397,153	2,248	37,742	5	100
Douglas	11,141	295,565	343	4,281	57	
DuPage	32.571	1,297,521	1,023	22,515	85	2,231
Edgar	10,484	271,060	176	2,162	55	566
Edwards	1,242	21,717				
Effingham	17 349	361,863	308	2,707		
Fayette	12,398	245.363	119	1,027	1	15
Ford	17,313	514,232	464	3,584	40	600
Franklin						
Fulton	19,521	715,804	10,972	228,925	89	1,808
Gallatin	1,119	10,688	8	80		
Greene	2,709	103,735	6	65		
Grundy	12,896	451,216	877	7,505	62	400
Hamilton	2,392	37,374				
Hancock	36,827	1,426,059	3,207	35,000	1,460	13,920
Hardin	1,071	8,259	19	95		
Henderson	13,102	468.210	4,228	68,859	53	773
Henry	36,420	1,323,015	5,109	82,567	239	6,319
Iroquois	39,048	1,110,058	2,217	28,611	34	367
Jackson	2,676	30,283	15	400	71	1,808
Jasper	8,799	223 955	252	1,976	5	90
Jefferson	8 852	123,244	65	454	83	656
Jersey						
JoDaviess	33,602	1,095,688	1,374	17,116	629	16,710
Johnson	1,223	14,864	8	30		
Kane	29,327	1,084,166	1,164	19,249	296	5,788
Kankakee	31,782	1,241,767	2,289	20,909	11	94
Kendall	21,473	884,979	423	3,720	44	521
Knox	38,661	1,375,291	6,502	64,363	171	2,715
Lake	26,499	1,125,556	245	3,503	270	6,370
LaSalle	61,236	2,443,549	2,299	33,860	824	11,130
Lawrence	2,728	48,666	76	797	193	5,150
Lee	51,110	2,310,112	2,120	42,191	3,410	28,110
Livingston	48,971	1,622,192	4,150	38,908	1	4
Logan	19,000	614,524	2,116	40,410	492	18,620
Macon	24,244	854,766	1,065	17,921	157	4,657
Macoupin	11,977	423,151	192	2,351	10	120
Madison	13,050	261,000	1,550	19,600		
Marion	11,614	226,966	152	1,236	6	126
Marshall	19,929	756,536	2,046	26,041	29	490
Mason						
Massac	947	10,088	11	123		
McDonough	24,170	993,961	5,322	97,636		
McHenry	37,383	2,289,750	858	12,577	769	18,035
McLean	60,449	1,988,029	8,367	127,425	169	2,646
Menard	10,200	306,000	1,689	32,780	198	3,920
Mercer	22,978	835,309	3,685	49,168	5	53
Monroe	5,836	104,097	35	463	192	5,686
Montgomery	15,637	479,473	277	4,294	2	55
Morgan	11,282	421,327	5,000	100,000	223	4,460
Moultrie	10,411	322,699	134	1,616	37	787
Ogle	61,556	2,192,775	3,395	48,820	7,828	152,228
Peoria	24,498	909,121	9,472	160,995		
Perry	8,120	167,425	10	90		
Platt	16,850	459,544	946	16,428	33	646

Agricultural Statistics, 1880—Continued.

Counties	OATS		RYE		BARLEY	
	Acres	Bushels produced	Acres	Bushels produced	Acres	Bushels produced
Pike	4 756	110 841	122	1 682	8	125
Pope	3 618	50 285	.		7	34
Pulaski	617	18 510				
Putnam	5 789	285 430	1 165	21 310	10	180
Randolph	9 567	191 101	30	321	74	2 179
Richland	5 780	119 047	129	945	12	107
Rock Island	15 732	437 924	2 997	37 101	551	7 694
Saline	2 216	28 025				
Sangamon	12 466	420 530	1 361	27 858	320	7 334
Schuyler	6 161	188 727	438	4 895	16	265
Scott	794	27 810	53	805		
Shelby	15 155	386 753	379	5 996	5	150
Stark	15 842	617 400	1 649	26 981	13	155
St Clair	11 228	255 556	23	200	850	31 417
Stephenson	40 334	1 495 238	9 168	153 318	10 788	256 985
Tazewell	29 802	899 979	4 174	56 604	50	1 150
Union	4 056	51 927	15	202	6	95
Vermilion	17 996	414 508	588	7 361	92	1 761
Wabash	1 802	27 091	27	113		
Warren	35 813	1 443 004	6 807	246 404	45	1 612
Washington	18 513	343 229	56	640		
Wayne	8 057	110 214	44	309		
White	2 483	21 441	16	56	8	150
Whiteside	33 007	1 133 580	5 692	81 448	2 209	37 441
Will	69 321	2 000 563	1 518	19 774	90	1 294
Williamson	5 927	93 703				
Winnebago	48 127	1 767 953	7 906	94 482	1 019	21 300
Woodford	40 290	1 312 948	7 204	62 499	22	106
Total	1 866 387	63 360 303	163 391	2 557 426	42 688	841 188

Agricultural Statistics, 1880—Continued

Counties	TIMOTHY MEADOW		CLOVER MEADOW		PRAIRIE		HUNGARIAN AND MILLET	
	Acres	Tons produced	Acres	Tons produced	Acres	Tons produced	Acres	Tons produced
Adams	25 620	26 171	2 688	2 682			66	142
Alexander	287	314	230	116	6		17	34
Bond								
Boone	14 534	18 033	2 407	3 443	7 885	10 074	68	119
Brown	8 202	12 170	1 070	1 503			3	3
Bureau	32 973	42 908	728	566	11 494	15 844	126	207
Calhoun	1 667	1 216	1 546	1 038	1 343	280	46	36
Carroll	18 899	25 5[illegible]	5 192	7 440	2 517	3 967	545	648
Cass	1 431	3 916	37	12	16	53		8
Champaign	32 5[illegible]	39 812	343	480	2 341	2 200	262	580
Christian	27 [illegible]	36 942	188	141	1 425	1 196	79	57
Clark	15 895	16 717	1 426	1 299			9	13
Clay	16 392	15 454	48	95	754	437	117	189
Clinton	9 816	8 019	456	377	522	139	71	83
Coles	18 408	20 400	843	903	112	107	477	845
Cook	25 297	2[illegible] 696	998	1 181	59 469	63 879	1 642	426
Crawford	11 223	11 351	458	553			16	13
Cumberland	12 20[illegible]	11 2[illegible]7	41	49	48	38	12	13
Dekalb	39 748	52 968	3 551	4 932	25 401	28 470	279	684
DeWitt	13 623	16 408	325	262	409	395	61	102
Douglas	19 664	20 458	237	256	768	683	745	1 928
DuPage	21 030	30 631	262	362	17 081	20 861	495	890
Edgar	24 967	28 530	733	681	412	462	126	261
Edwards	7 [illegible]	8 305	986	1 117				
Effingham	17 360	13 266	71	3	922	5[illegible]	71	68
Fayette	14 067	11 140	396	366	282	293	114	96
Ford	20 397	18 782	158	190	3 236	2 701	308	304
Franklin								
Fulton	23 076	34 722	5 218	6 715	264	421	14	19
Gallatin	1 948	2 076	2 118	1 850			109	206
Greene	13 561	20 878	906	888	42	207	184	115
Grundy	15 579	17 084	266	493	11 502	12 126	274	218
Hamilton	5 301	5 196	572	655				
Hancock	33 382	34 109	1 077	958	286	310	41	37
Hardin	1 107	811	815	563			22	25
Henderson	9 286	9 235	214	135	715	180	40	40
Henry	31 504	35 998	507	607	12 027	16 661	550	801
Iroquois	42 611	46 563	366	333	9 408	8 396	1 355	1 340
Jackson	3 2[illegible]5	7 987	5 037	11 348	12	11	66	78
Jasper	19 154	19 845	65	60	248	112	105	94
Jefferson	8 601	7 352	245	161	1 534	1 292	114	128
Jersey								
JoDaviess	28 719	29 309	4 600	7 841	2 451	3 094	24	23
Johnson	1 24[illegible]	1 380	3 586	3 843			10	5
Kane	34 401	50 415	1 110	1 546	16 463	21 153	543	900
Kankakee	32 232	39 823	1 113	1 384	16 801	17 707	7 296	3 572
Kendall	18 947	26 454	1 139	1 765	8 105	10 114	166	240
Knox	39 674	40 743	1 213	750	331	520	207	341
Lake	19 956	21 413	2 692	3 204	20 063	23 019	548	859
LaSalle	49 577	59 650	991	1 006	28 069	30 056	576	1 022
Lawrence	8 334	9 457	1 791	1 733	85	64	116	377
Lee	31 272	34 291	8 150	8 217	17 917	20 148	812	1 821
Livingston	40 889	47 970	478	521	14 442	14 002	842	1 366
Logan	13 692	16 504	221	96	435	505	24	23
Macon	18 802	24 513	514	987	246	251	74	198
Macoupin	27 392	29 505	558	661	20		144	223
Madison	14 500	15 350	2,750	3 100	4 300	700	2 580	3 625
Marion	13 192	10 317	85	60	117	135	100	170
Marshall	11 052	13 770	1 689	1 953	941	1 123	168	210
Mason								
Massac	1 716	1 402	1 261	783	3	6	18	16
McDonough	21 706	35 508	992	1 287				
McHenry	30 467	4[illegible] 918	4 920	7 524	25 076	34 350	1 266	1 688
McLean	47 862	62 554	1 228	1 376	2 191	2 090	54	76
Menard	20 162	30 081	2 202	2 202	1 449	1 449	159	318
Mercer	22 601	27 091	661	32	2 976	2 821	155	236
Monroe	2 776	2 917	5 824	4 136			38	58
Montgomery	25 289	27 150	284	472	31		214	308
Morgan	33 972	50 958	1 000	1 500	90	84	60	90
Moultrie	10 071	11 073	62	75	180	178	270	1 071
Ogle	30 860	34 727	9 455	10 502	5 572	6 198	285	565
Peoria	21 677	28 104	2 282	3 074	706	922	21	38

Agricultural Statistics, 1880—Continued.

Counties.	TIMOTHY MEAD'W		CLOVER MEADOW		PRAIRIE.		HUNGARIAN AND MILLET.	
	Acres.	Tons produced	Acres.	Tons produced.	Acres.	Tons produced.	Acres,	Tons produced.
Perry..	4,733	4,875	1,580	1,598	....	....	11	25
Piatt.	9,271	11,247	105	106	590	586	168	144
Pike	12,450	15,176	2,404	2,638	61	79	114	182
Pope.	2,428	2,239	1,637	1,591	....	....	66	67
Pulaski	1,775	1,775	1,000	1,200	....	....	....	....
Putnam...	5,309	6,588	209	321	471	506	36	69
Randolph	5,117	5,424	3,753	3,730	19	16	177	266
Richland.	13,466	13,230	933	1,006	6	....	24	64
Rock Island ...	13,721	19,126	782	825	7,663	10,079	111	203
Saline......	3,413	3,485	1,266	1,392	....	....	....	....
Sangamon	22,332	30,241	388	547	94	65	82	150
Schuyler.	11,970	15,811	2,430	2,300	30	5	8	17
Scott.	4,218	6,162	16	23	78	78	2	2
Shelby...........	25,232	26,873	115	183	77	66	440	925
Stark	10,293	12,780	237	351	1,025	1,226	40	46
St Clair.	9,619	10,873	6,328	6,827	30	44	72	127
Stephenson....	16,360	29,434	6,913	8,803	6,273	9,320	427	1,337
Tazowell.	21.343	30,696	1,258	1,689	676	714	37	49
Union..	1,825	1,214	4,046	5,265	9	7	15	12
Vermilion.	34,981	39,851	590	680	1,118	887	903	1,277
Wabash.........	3,683	4,480	1,688	2,208	1,071	1,243	....	....
Warren..	24,605	25,062	731	143	135	165	55	82
Washington	4,374	4,503	193	197	53	43	86	128
Wayne..........	11,669	10,830	1,024	1,034	2,771	2,600	5,175	4,662
White.	5,407	4,227	4,209	3,647	21	14	7	12
Whiteside.	24,300	32,880	926	1,089	15,200	21,741	437	801
Will	41,777	52,746	2,166	2,735	37,183	40,362	977	5,373
Williamson. ...	3 352	4,333	5,003	6,372	15	15	22	24
Winnebago ...	19,29[illegible]	26,913	4,917	6,148	6,838	8,676	254	519
Woodford.	23,620	25,580	2,228	2,395	2,613	2,641	67	171
Total	1,725,579	2,067,320	164,810	194,048	425,694	484,188	35,212	49,023

Agricultural Statistics, 1880—Continued.

Counties.	BUCKWHEAT.		CASTOR BEANS.		BEANS.		PEAS.	
	Acres.	Bushels produced	Acres.	Bushels produced	Acres.	Bushels produced	Acres.	Bushels produced
Adams	25	53	....	15	12	521	9	525
Alexander	1	10	....	....	....	....	....	....
Bond	....	....	....	....	....	....	....	....
Boone	604	6,470	....	....	17	146	21	630
Brown	1	16	....	....	....	....	....	....
Bureau	81	728	3	20	1	11	....	....
Calhoun	....	....	....	....	2	10	....	....
Carroll	79	848	....	....	5	16	3	70
Cass	....	2	....	....	1	7	....	....
Champaign	47	354	....	....	10	108	1	10
Christian	1	22	....	....	2	9	....	....
Clark	193	1,287	....	53	86	658	....	2
Clay	25	300	10	44	25	181	....	....
Clinton	....	....	78	558	161	151	1	10
Coles	27	457	....	....	27	240	....	....
Cook	97	955	4	101	1	18	67	1,636
Crawford	100	1,788	....	....	12	69	....	....
Cumberland	51	435	....	....	133	965	....	....
DeKalb	432	4,318	....	....	3	46	2	50
DeWitt	17	136	....	....	3	93	....	....
Douglas	6	35	....	....	10	116	1	135
DuPage	27	177	....	....	5	92	5	162
Edgar	18	157	....	....	11	169	1	24
Edwards	....	....	....	....	....	....	....	....
Effingham	31	329	....	....	22	176	3	36
Fayette	37	431	....	....	53	408	....	....
Ford	18	84	....	....	66	425	25	500
Franklin	....	....	....	....	....	....	....	....
Fulton	118	677	1	5	3	66	1	5
Gallatin	....	....	....	....	....	....	....	....
Greene	....	....	....	....	6	80	2	50
Grundy	44	225	1	15	6	120	4	165
Hamilton	....	....	....	....	....	....	2	25
Hancock	67	643	1	122	8	23	14	320
Hardin	....	....	....	....	....	....	....	....
Henderson	16	100	....	....	....	....	....	....
Henry	38	453	....	....	4	40	....	....
Iroquois	281	1,539	3	32	38	363	12	200
Jackson	55	301	....	....	....	....	....	....
Jasper	65	586	1	23	26	307	1	8
Jefferson	2	20	16	67	6	71	2	104
Jersey	....	....	....	....	....	....	....	....
JoDaviess	203	2,177	....	....	19	357	6	38
Johnson	....	....	....	....	....	....	....	....
Kane	199	2,377	....	....	1	....	3	200
Kankakee	154	735	....	....	6	64	2	22
Kendall	83	624	....	....	....	....	4	390
Knox	26	66	....	....	20	129	2	45
Lake	147	1,399	1	4	11	161	12	50
LaSalle	106	1,003	....	....	14	194	4	145
Lawrence	105	1,071	....	....	5	39	....	....
Lee	131	1,610	....	....	8	102	....	....
Livingston	96	276	1	6	72	859	....	....
Logan	....	....	....	....	....	....	....	....
Macon	1	2	....	....	4	88	1	30
Macoupin	10	200	....	....	3	132	....	4
Madison	5	180	....	....	....	....	....	....
Marion	77	212	142	674	5	96	1	12
Marshall	56	410	....	....	10	40	....	56
Mason	....	....	....	....	....	....	....	....
Massac	4	20	....	....	3	5	9	250
McDonough	16	139	....	....	1	38	....	....
McHenry	1,025	10,708	....	....	52	647	6	110
McLean	58	348	1	14	33	262	1	10
Menard	17	200	....	....	....	....	....	....
Mercer	107	1,030	1	1	1	13	9	314
Monroe	....	....	....	....	....	....	....	....
Montgomery	....	....	....	....	1	23	....	....
Morgan	10	150	....	....	40	500	35	1,400
Moultrie	1	9	1	3	3	40	....	....
Ogle	173	1,746	1	7	31	421	1	30
Peoria	55	465	....	....	24	274	1	25
Perry	1	20	....	....	....	....	....	....

Agricultural Statistics, 1880—Continued.

Counties.	BUCKWHEAT.		CASTOR BEANS.		BEANS.		PEAS.	
	Acres.	Bushels produced.	Acres.	Bushels produced.	Acres.	Bushels produced.	Acres.	Busgels produced.
Piatt	31	281	1	4	5	55	2	120
Pike					6	40		
Pope							1	100
Pulaski					100	4,000	150	6,000
Putnam	12	131						
Randolph	5	71	20	80			1	20
Richland	63	525			15	137	2	16
Rock Island	94	1,007			6	69	64	4,165
Saline								
Sangamon	1				3	165	10	630
Schuylor	16	36			4	5		
Scott								
Shelby	41	447	8	66	1	8		
Stark	27	246						
St. Clair	28	780			2	200	5	270
Stephenson	191	2,269	2	30	7	68	3	34
Tazewell	54	642			4	52		
Union	7	69						
Vermilion	28	171	1	5	13	176	4	123
Wabash	11	62			1	12		
Warren	57	284			6	15		
Washington	1	10	14	75	8	132	3	123
Wayne	14	123	52	220	30	150		
White	4	40			1	5		
Whiteside	198	1,579			15	108		
Will	49	590	7	114	8	107	3	70
Williamson	3	30	127	1,112				
Winnebago	150	913	2	10	26	131	1	90
Woodford	126	809			6	70	19	775
Total	6,681	62,128	500	3,480	1,398	15,894	512	20,434

Agricultural Statistics, 1880—Continued.

Counties	IRISH POTATOES		SWEET POTATOES		TURNIPS AND OTHER ROOT CROPS	
	Acres	Bushels produced	Acres	Bushels produced	Acres	Value of crop produced
Adams	1 891	75 643	76	6 201	25	$1 060
Alexander	73	5 973	13	1 780	9	220
Bond						
Boone	586	44 323	3	190	3	525
Brown	346	16 885	5	330	4	175
Bureau	1 049	81 993	4	230	3	447
Calhoun	209	7 260				
Carroll	619	36 240		62		
Cass	41	6 258	20	267	4	99
Champaign	1 601	114 678	18	1 197	1	29
Christian	618	48 902	16	1 485	37	1 782
Clark	439	26 628	3	477		
Clay	236	27 975	2	273	1	112
Clinton	744	50 831	22	96	1	200
Coles	737	52 663	3	314	27	1 502
Cook	8 131	628 432	4	125	84	11 555
Crawford	405	19 432	10	809	5	536
Cumberland	224	10 981			1	50
DeKalb	1 424	89 144	1	50	9	
DeWitt	308	19 768	6	316	40	830
Douglas	212	10 081	7	681		
DuPage	3 491	274 206	2	100	27	1 737
Edgar	388	33 320	19	1 374	16	1 403
Edwards	70	16 590		115		11
Effingham	723	44 284	3	188	13	1 835
Fayette	312	21 335	12	505	11	324
Ford	302	10 108	2	140	4	230
Franklin						
Fulton	774	36 750	18	1 288	13	298
Gallatin	306	64 937	4	250	4	300
Greene	133	23 583	32	1 586	69	4 173
Grundy	499	3 783	22	5 065	3	160
Hamilton	139	8 758	6	496	3	47
Hancock	1 009	58 801	19	296	47	2 130
Hardin	1 111	57 942	3	490	35	206
Henderson	65	3 178	8	600	10	
Henry	1 146	49 711			3	10
Iroquois	1 306	50 686	8	668	15	2 031
Jackson	183	12 545	13	1 114	25	1 112
Jasper	637	29 158	12	1 176	9	244
Jefferson	332	14 869	19	997	56	490
Jersey						
JoDaviess	1 423	96 507	2	153	10	225
Johnson	78	3 945	10	2 020	7	74
Kane	1 208	95 028			2	165
Kankakee	980	37 242	3	100	1	662
Kendall	699	49 093			1	50
Knox	1 005	51 995	28	1 405	7	
Lake	1 491	93 617			22	372
LaSalle	3 094	178 200	2	128	161	178
Lawrence	360	24 192	12	917	8	81
Lee	1 620	91 4 7	12	580	100	5 910
Livingston	1 240	40 632	9	348	33	3 749
Logan	643	33 147	2	431	1	145
Macon	1 081	71 432	25	4 316	38	4 090
Macoupin	562	38 230	4	741	7	299
Madison	5 750	490 000	75	5 400	250	5 000
Marion	299	19 215	3	512	61	592
Marshall	425	22 250	2	300		
Mason						
Massac	149	8 262	76	4 790	48	615
McDonough	407	20 949	18	894		
McHenry	1 566	118 271			28	402
McLean	1 557	63 540	10	682	13	460
Menard	399	8 076	67	5 064	153	5 075
Mercer	1 005	68 857	14	645	13	190
Monroe	1 046	72 976				
Montgomery	930	41 025		742	4	84
Morgan	2 515	210 120	100	5 260	35	2 700
Moultrie	183	8 649	10	414	1	104

Agricultural Statistics, 1880—Continued.

Counties.	IRISH POTATOES.		SWEET POTATOES.		TURNIPS AND OTHER ROOT CROPS.	
	Acres.	Bushels produced.	Acres.	Bushels produced.	Acres.	Value of crop produced.
Ogle	1,369	100,770	95	7,662	7	$633
Peoria	1,559	79,252	33	2,195	62	11,351
Perry	105	4,445	3	320	....	....
Piatt	265	12,909	109	5,815	....	....
Pike	516	1,979	7	135	115	632
Pope	1,758	86,605	94	3,739	....	....
Pulaski	400	40,000	721	70,000	150	....
Putnam	298	17,345	....	....	....	180
Randolph	587	41,198	33	3,314	14	512
Richland	348	20,721	5	468	3	22
Rock Island	1,950	145,486	1	220	12	820
Saline	....	....	....	....	....	....
Sangamon	529	28,251	516	8,702	11	813
Schuyler	263	14,140	3	125	16	8,760
Scott	164	8,686	4	195	....	....
Shelby	382	32,260	26	1,011	....	....
Stark	391	21,734	....	....	....	....
St. Clair	3,706	345,643	17	2,063	5	110
Stephenson	1,762	125,155	2	87	13	960
Tazewell	809	37,359	51	4,952	....	....
Union	479	30,831	338	28,497	63	3,114
Vermilion	930	55,426	11	1,201	34	4,303
Wabash	267	9,437	4	505	1	50
Warren	375	17,267	5	75	4	144
Washington	798	46,638	22	1,383	15	405
Wayne	249	12,901	4	306	16	61
White	186	7,900	27	912	16	474
Whiteside	1,189	72,725	5	444	1	9
Will	2,725	168,050	1	10	23	1,380
Williamson	583	45,680	345	31,845	29	791
Winnebago	1,124	89,815	....	....	14	235
Woodford	758	25,789	1	48	45	2,000
Total	92,342	5,987,554	3,382	224,522	2,300	$105,414

Agricultural Statistics, 1880—Continued.

Counties.	HEMP (Fibre).		COTTON.			FLAX.		
	Acres.	Pounds produced.	Acres.	Pounds lint produced.	Bushels seed produced.	Acres.	Pounds fibre produced.	Bushels seed produced.
Adams								
Alexander								
Bond								
Boone	112	56,600				1,010		8,682
Brown								
Bureau						14	15	147
Calhoun								
Carroll						6		155
Cass								
Champaign						9,421	32,719	99,018
Christian						46		534
Clark			32	110				726
Clay						3,223	2,048	30,309
Clinton								50
Coles	26							86
Cook						9,678	217,019	98,057
Crawford						191	9,100	
Cumberland								911
DeKalb						6,201	2,188,562	62,373
DeWitt								
Douglas						507	8,700	3,405
DuPage						5,523	132,332	57,211
Edgar						36		957
Edwards							50	
Effingham						429		4,620
Fayette						331	280	
Ford						29,552	12,444	234,057
Franklin								
Fulton								
Gallatin						1		
Greene								
Grundy						991	61	9,910
Hamilton								
Hancock							20	
Hardin								
Henderson								
Henry								
Iroquois	45	230				39,714	79,386	294,456
Jackson					20			
Jasper						3,637	9,886	25,007
Jefferson						40	1,709	538
Jersey								
JoDaviess						1,075	97,820	8,643
Johnson								
Kane			61			174	31,500	5,048
Kankakee	15	6,000				5,147	11,240	51,678
Kendall						47		550
Knox								400
Lake						5,570	37,760	89,594
LaSalle						167	5,000	1,653
Lawrence						36		215
Lee								
Livingston						18,408	6,033	161,180
Logan								
Macon					100	739	289,710	7,324
Macoupin						1	25	50
Madison								
Marion						868	63,679	13,468
Marshall								
Mason								
Massac			6	7,420				35
McDonough								
McHenry		81				1,608		12,158
McLean						3,946	7,726	34,036
Menard								
Mercer								
Monroe								
Montgomery								
Morgan								
Moultrie						616	3,230	10,505
Ogle						705	1,341	7,154
Peoria								

Agricultural Statistics, 1880—Continued.

Counties.	HEMP (Fibre).		COTTON.			FLAX.		
	Acres.	Pounds produced.	Acres.	Pounds lint produced.	Bushels seed produced.	Acres.	Pounds fibre produced.	Bushels seed produced.
Perry	....	....	....	....	....	12	806	....
Piatt	....	....	....	....	....	3,996	7,899	30,629
Pike	....	....	....	....	....	....	....	....
Pope	....	....	....	....	....	....	....	....
Pulaski	....	....	....	....	....	....	....	....
Putnam	....	....	....	....	....	....	....	....
Randolph	....	....	....	....	....	....	....	....
Richland	....	....	....	....	....	283	380	4,131
Rock Island	....	....	....	....	....	....	....	....
Saline	....	....	....	....	....	....	....	....
Sangamon	....	....	....	....	....	....	25	31
Schuyler	....	....	....	....	....	....	....	3
Scott	....	....	....	....	....	....	....	....
Shelby	....	....	....	....	....	26	....	355
Stark	....	....	....	....	....	....	....	....
St. Clair	....	....	....	....	....	....	....	12,500
Stephenson	....	....	....	....	....	913	3,735	9,821
Tazewell	....	....	....	....	....	....	....	500
Union	....	....	1	25	....	....	....	....
Vermilion	....	....	....	....	....	12,282	132,187	86,429
Wabash	....	....	....	....	....	....	....	....
Warren	....	....	....	....	....	....	....	....
Washington	....	....	....	....	....	31	425	105
Wayne	....	....	....	....	....	534	100	3,588
White	1	20	....	....	....	....	....	....
Whiteside	....	....	....	....	....	....	....	12
Will	....	....	....	....	....	1,606	19,522	18,119
Williamson	....	....	31	40,000	....	....	....	....
Winnebago	....	....	....	....	....	6	....	196
Woodford	....	....	....	....	....	21	1,650	211
Total	199	62,931	131	47,555	120	169,368	3,416,124	1,501,530

Agricultural Statistics, 1880—Continued.

Counties	TOBACCO		BROOM CORN		SORGHO		OTHER CROPS NOT NAMED	
	Acres	Pounds produced	Acres	Pounds produced	Acres	Gallons syrup made	Acres	Value of crop produced
Adams	3	1 462	3	420	210	8 738	201	$4 770
Alexander	1	700			35	4 003	75	1 500
Bond								
Boone	25	22 100	130	812 600	10	1 102	2	100
Brown	7	5 450	3	600	135	6 858		
Bureau	1	240			65	5 174	42	122
Calhoun					4	320		
Carroll	9	12 400			24	1 874	9	90
Cass	2	50			11	896		
Champaign	1	590	881	436 900	116	16 021	58	540
Christian			17	20 000	36	2 935	404	1 350
Clark	3	2 891	2	540	250	15 738	66	69
Clay	4	1 475			208	6 652		
Clinton	1	970			15	1 521		
Coles	8	3 973	5 852	3 392 620	97	11 444		50
Cook	35	3 100			5	1 131	310	4 732
Crawford	59	6 640	4	2 733	178	10 429		
Cumberland	1	375	63	26 024	143	8 812	1	193
DeKalb					18	1 715	425	116
DeWitt			47	17 500	19	1 449	292	2 220
Douglas			4 310	5 001 871	30	4 099	50	
DuPage			15	7 500	23	3 040	566	2 065
Edgar		240	358	289 256	75	6 588	72	726
Edwards					52	11 932		
Effingham	4	1 350	1	218	224	11 474	26	240
Fayette	8	3 960	4	2 400	120	5 350	2	25
Ford			99	32 200	29	1 485	18	1 060
Franklin								
Fulton	2	1 680	16	2 500	183	10 030	145	3 852
Gallatin	15	12 200			107	3 279	58	1 250
Greene	12	1 289			53	5 405	15	570
Grundy					6	894	123	3 775
Hamilton	100	64 850			101	5 315		
Hancock	2	1 275	34	74 702	233	17 224	68	150
Hardin	1	500			82	4 656		
Henderson			18	8 300	31	698	31	120
Henry		30	4 578	2 998 050	75	8 652	29	4 150
Iroquois	1	405	25	12 300	164	10 022	164	16
Jackson	7	4 950	4	3 100	33	3 814	317	4 982
Jasper	5	4 055	1	2 475	429	23 166	31	36
Jefferson	6	3 400	1	300	109	8 677	41	1 130
Jersey								
JoDaviess	529	517 200	10	6 140	27	3 190	52	425
Johnson	72	26 303	2	400	93	5 120		
Kane					1	55	3	
Kankakee	1	100	10	1 000	62	3 044	1 038	2 494
Kendall					21	2 282	259	
Knox	1 521	910 400			103	9 251	336	
Lake	1	120			34	721	1 052	12 020
LaSalle	50		43	23 000	251	10 128	3	200
Lawrence	8	2 047	7	960	148	9 640	142	
Lee	30	31 018			16	1 600	131	15 018
Livingston			56	8 800	127	6 449	990	6 000
Logan			44	30 000	34	2 185		1 782
Macon		120	4	3 000	43	4 852	24	500
Macoupin		540	20	11 573	71	7 080	48	800
Madison			290	580 000	250	20 000	4 500	
Marion	11	4 750	20	1 000	65	4 107	6	580
Marshall			18	6 000	18	1 866		250
Mason								
Massac	68	33 778			100	5 907	11	563
McDonough			9	2 020	217	13 389		
McHenry			12	4 000	153	10 471	634	44 700
McLean		25	28	12 100	89	6 290	26	798
Menard	5	167	7	7 003	160	8 925	189	500
Mercer		60	204	149 150	147	12 236	77	490
Monroe					59	1 291	68	635
Montgomery	1	542	12	7 033	41	2 097	691	1 219
Morgan	8	3 200	32	15 680	75	4 260	155	12 968
Moultrie	1	550	57	46 300	43	5 378		292
Ogle	4	3 552	41	18 680	47	5 853	937	1 393

Agricultural Statistics, 1880—Continued.

Counties	TOBACCO.		BROOM CORN.		SORGHO.		OTHER CROPS NOT NAMED.	
	Acres.	Pounds produced.	Acres	Pounds produced.	Acres.	Gallons syrup made,	Acres.	Value of crop produced
Peoria	1	325	76	39,000	196	14,748	14	$850
Perry	......	......	......	......	......	......	......	......
Piatt	......	1,600	543	35,885	7	626	9	......
Pike	28	12,700	7	2,550	109	4,343	24	500
Pope	......	......	9	3,735	517	23,376	1	15
Pulaski	......	......	......	......	300	30,000	......	......
Putnam	......	......	5	3,000	56	2,507	......	......
Randolph	......	50	7	1,000	114	7,147	1	30
Richland	1	295	7	885	179	6,643	......	......
Rock Island	......	......	80	41,000	45	4,474	111	376
Saline	310	191,055	3	1,500	49	2,250	......	......
Sangamon	1	220	......	840	33	3,063	330	3,395
Schuyler	1	2,161	65	14,889	128	8,036	31	130
Scott	......	......	......	......	7	275	......	......
Shelby	1	420	20	8,000	108	8,923	29	120
Stark	......	......	23	11,500	57	5,910	1	250
St. Clair	......	......	......	......	28	1,767	26	25
Stephenson	189	233,974	18	6,900	39	3,094	44	260
Tazewell	......	......	......	......	45	4,220	......	30
Union	1	75	4	600	141	9,391	316	6,865
Vermilion	1	250	70	22,900	116	9,603	192	2,085
Wabash	......	......	18	5,000	57	5,369	8	650
Warren	......	150	147	105,000	83	7,072	70	75
Washington	5	1,464	6	1,300	72	2,251	2	40
Wayne	20	11,820	......	......	301	1,949	1	100
White	29	11,590	5	500	169	6,708	181	1,690
Whiteside	......	......	1	400	34	2,071	......	......
Will	......	......	24	16,000	3	141	377	......
Williamson	864	569,470	2	1,000	530	30,640	......	......
Winnebago	......	......	82	50,400	11	751	295	6,892
Woodford	1	50	8	4,324	53	3,695	26	240
Total	4,091	2,736,407	18,652	14,457,156	9,825	636,216	18,004	$168,244

Agricultural Statistics, 1880—Continued.

Counties	Apple Orchards		Peach Orchards		Pear Orchards		Vineyards		Fruits and Berries not included in orchards	
	Acres	Bushels produced	Acres	Bushels produced	Acres	Bushels produced	Acres	Bushels produced	Acres	Value of crop produced
Adams	5 936	299 346	183	4 313	8	233	520	12 387	163	$13 687
Alexander	377	7 127	5	105					27	
Bond										
Boone	1 182	87 998					2		4	
Brown	1 845	133 304	65	4 540	1	22	6	950	4	72
Bureau	5 112	216 110	4	330	1	50	33	7 437	10	1 327
Calhoun	2 450	106 300	152				16	3 240		
Carroll	2 001	80 853					8	685	1	50
Cass	313	32 222	36	3 451		71	9	1 255		97
Champaign	4 973	155 711	117	10 255	2	43	22	1 349	25	2 547
Christian	4 047	173 656	107	9 168	10	72	31	4 435	7	389
Clark	2 148	59 694	25	1 525		50	2	906		
Clay	2 304	95 130	70	3 379	3		4	370	11	425
Clinton	2 810	103 411	98	1 379	4	179	65	12 684	72	3 215
Coles	2 327	105 609	67	11 902	13	78	21	88	11	424
Cook	3 096	99 874	7	350	6	158	21	5 825	36	2 235
Crawford	1 856	88 749	21	1 765	1	100			17	115
Cumberland	1 282	40 356	30	1 458			6	310	11	664
DeKalb	3 967	165 168	52	20	1				3	1 050
DeWitt	2 081	89 432	42	2 288	4	218	6	228	4	455
Douglas	1 801	52 979	69	7 356	8	50	7	1 665	2	92
DuPage	2 791	128 395			4		11	280	19	360
Edgar	3 169	95 363	105	6 315	5	182	9	660	9	1 025
Edwards	1 589	39 466	23	1 065						
Effingham	1 861	53 730	66	2 772	1	6	15	1 307	67	925
Fayette	2 423	80 165	121	4 565	2	52	18	801	9	257
Ford	2 183	4 560	1	65						
Franklin										
Fulton	4 419	260 085	94	4 361	12	473	35	480	62	1 931
Gallatin	1 379	33 877	55	3 420	4	100	34	100	2	60
Greene	1 981	103 203	194	25 261	32	2 430	17	688	55	3 513
Grundy	1 650	44 613	8	100			2	20	115	1 472
Hamilton	1 933	81 725	55	3 685	1		4			
Hancock	6 018	276 513	106	3 488	7	300	460	145 522	214	800
Hardin	607	6 140	123	2 180			2	135		
Henderson	1 701	86 106	10	100			19	714		68
Henry	4 155	161 849	12	115	1		12	545	161	57
Iroquois	4 918	87 111	49	646	1	6	15	1 167	17	907
Jackson	2 585	95 600	436	5 173	25	421	23	758	190	7 241
Jasper	1 783	43 816	66	4 453	2	64	17	2 019	4	202
Jefferson	3 801	139 487	65	2 116	2	40	6	240	2	150
Jersey										
JoDaviess	2 344	162 459				2	35	5 526	38	700
Johnson	1 743	60 737	216	5 860					17	309
Kane	2 582	99 024							3	35
Kankakee	2 557	40 491	1	20			22	420	8	270
Kendall	2 702	78 696					24	560		
Knox	4 418	160 380	23	600	1	30	29	930	51	3 336
Lake	2 719	89 667	1		1	24	5	155	8	884
LaLalle	6 343	180 739	8	32	3	1	14	685	28	5 618
Lawrence	2 595	119 362	44	6 611	5	111	7	95		
Lee	3 721	91 011	2	10	2	25	18	850	105	10 090
Livingston	4 322	41 645	17	459			26	3 511	8	250
Logan	2 617	137 754	21	1 310	3	147	9	1 805	4	408
Macon	3 633	145 914	53	4 991	10	322	37	5 121	23	2 985
Macoupin	5 386	123 514	115	10 054	5	48	19	1 435	17	330
Madison	6 580	190 250	1 112	1 480	38	655	1 160	146 000	1 575	15 000
Marion	3 443	150 589	147	5 396	6	110	13	165	125	6 056
Marshall	1 679	69 551	1	20	5	8	7	1 310		709
Mason										
Massac	1 294	27 915	32	1 320			1	6		
McDonough	2 663	121 534	157	2 393			16	11 705	26	1 898
McHenry	3 067	162 845			1	16	24	1 650	75	3 419
McLean	7 055	169 417	60	1 041	1	47	43	3 750	26	2 733
Menard	1 732	45 302	27	2 700	4	277	25	5 403	27	456
Mercer	3 147	187 092	4	204	2	131	24	2 388	10	817
Monroe	1 597	53 607					101	33 577		
Montgomery	4 708	131 765	78	6 615	2	511	25	2 011	20	1 611
Morgan	3 622	163 986	127	1 621	3	67	12	2 146	45	8 290
Moultrie	1 418	30 901	505	14 896	58	4 215	4	54	75	507
Ogle	3 146	147 926		1			7	259	7	400

Agricultural Statistics, 1880—Continued.

Counties	APPLE ORCHARDS		PEACH ORCHARDS		PEAR ORCHARDS		VINEYARDS.		FRUITS AND BERRIES not included in orchards	
	Acres	Bushels produced	Acres	Bushels produced	Acres	Bushels produced	Acres	Bushels produced	Acres	Value of crop produced
Peoria	2 623	107 685	10	284	2	56	59	8 853	14	$2 162
Perry	909		34	1 530	17	130	4	1 600		
Piatt	1 514	27 293	37	1 320			10	202	16	924
Pike	4 577	136 032	62	1 957			71	1 747	15	200
Pope	1 406	71 416	685	30 376	144	6 746				
Pulaski	1 441	141 100	300	30 000	300	10 000	200		500	30 000
Putnam	989	55 005	4	470			1	410		
Randolph	2 482	99 529	117	5 328	6	170	27	3 783	2	205
Richland	2 547	97 858	32	2 878	1	102	17	528		45
Rock Island	2 636	164 930	6	602	1	15	37	5 470	18	1 112
Saline	1 683	78 095	93	3 660						
Sangamon	3 213	108 424	80	6 536	7	292	52	1 039	31	1 282
Schuyler	2 518	110 873	37	3 055	6		11	1 010	31	535
Scott	618	26 745	36	2 265			32	3 460		100
Shelby	3 585	21 031	114	13 672	19	727	39	5 193		12
Stark	1 200	170	4	200			2	480		
St Clair	4 452	192 130	44	1 897	3	297	316	35 552	208	8 174
Stephenson	3 411	163 491					7	639	4	6
Tazewell	3 225	124 907	17	630		20	35	4 838	27	1 375
Union	3 440	149 591	543	48 090	142	5 904	2	21	2 573	56 040
Vermilion	3 917	155 749	78	8 562	3	263	7	731	14	4 338
Wabash	1 420	53 555	5	215						
Warren	2 440	90 976	16	471			7	544	10	150
Washington	2 508	105 827	39	1 440	2	54	13	930	58	2 058
Wayne	6 209	115 081	84	4 40	1		3	275	29	116
White	1 921	47 607	118	4 335	1	25	1	30	3	57
Whiteside	3 570	110 454	6	161			3		17	830
Will	4 737	123 123			15	200	17	2 937	481	5 045
Williamson	3 038	164 030	310	22 160	20	563	4		12	616
Winnebago	2 477	201 560	3	200			1	120	61	3 512
Woodford	2 726	55 975	8	238			85	9 771	4	100
Total	279569	10 542 186	8 412	398 970	1 001	35 714	4 340	530 990	7 803	$231 417

Agricultural Statistics, 1880—Continued.

Counties	UNCULTIVATED ACREAGE					
	Pastures	Woodland	Uncultivated land	Area city and town real estate	Acres not included elsewhere	Total number of acres reported for county
Adams	43 137	80 234	32 509	1 881		392 441
Alexander	145	16 811	2 433			34 219
Bond						
Boone	52 568	16 131	7 340	833		171 593
Brown	21 360	43 943	33 460	870	13 625	189 634
Bureau	103 754	14 844	17 967	493		425 644
Calhoun	1 585	52 510	12 308			106 615
Carroll	61 577	20 093	10 974	8 080		248 217
Cass	10 326	6 768	1 152		18[illegible]	84 288
Champaign	84 638	10 265	39 611	4 394	174 921	631 883
Christian	59 758	19 928	13 300	21 122		378 215
Clark	25 380	59 206	30 347	470		235 818
Clay	16 642	34 401	11 593	40		177 270
Clinton	21 626	42 592	60 140	1 127		289 009
Coles	49 549	83 219	51 718	2 122		316 476
Cook	84 992	9 722	9 529	4 140		321 809
Crawford	28 304	36 234	6 627	480		172 635
Cumberland	18 119	30 830	37 557	546		170 236
DeKalb	103 544	13 362	11 720	3 642		381 506
DeWitt	39 790	14 938	10 719	1 217		198 358
Douglas	47 543	10 473	7 932	2 320	68 928	242 332
DuPage	52 440	13 222	11 031	8 936		204 590
Edgar	89 368	23 595	14 979	770		312 542
Edwards	5 858	21 7[illegible]1	46 434	910		141 023
Effingham	18 394	3 860	22 859	3 335		206 091
Fayette	20 100	55 941	12 049	4 340	201 278	414 713
Ford	33 107	2 902	24 322		46 348	304 759
Franklin						
Fulton	59 412	81 269	37 878	2 709		393 811
Gallatin	2 520	21 101	76 742			104 284
Greene	46 766	33 502	13 000			229 333
Grundy	57 555	3 705	9 642	37		206 439
Hamilton	2 660	153 580	1 511	890		221 335
Hancock	55 036	28 868	22 165	245		329 491
Hardin	2 156	10 321	1 091			28 944
Henderson	45 368	31 358	49 709	1 [illegible]		240 070
Henry	102 928	7 691	11 053	964		415 577
Iroquois	88 946	13 081	24 618	568		505 394
Jackson	4 7[illegible]5	63 061	17 402	1 878		171 866
Jasper	12 972	29 236	12 360		11 227	169 681
Jefferson	18 075	92 825	12 341	383	10 273	258 574
Jersey						
JoDaviess	53 825	77 999	39 046	611	62 876	377 077
Johnson	3 825	82 711	1 005	40		131 131
Kane	88 248	18 544	2 656	2 281		254 377
Kankakee	51 779	4 955	21 427	386		282 371
Kendall	46 923	13 671	1 438	3 577		194 916
Knox	129 302	34 544	15 969	2 004		429 583
Lake	59 333	26 948	11 358	2 985	12 386	223 127
LaSalle	166 897	37 531	11 997	8 759		650 850
Lawrence	11 339	39 927	80 642	1 786		229 409
Lee	70 917	18 225	28 910			403 474
Livingston	79 316	6 148	20 143	1 168		499 924
Logan	46 998	16 836	5 577	265		289 387
Macon	52 267	14 997	9 832	1 204		297 465
Macoupin	68 934	50 071	16 655	2 853		398 878
Madison	39 500	66 000	29 220			418 285
Marion	25 453	41 880	7 805	7 036		200 252
Marshall	34 038	15 379	7 379	221		164 164
Mason						
Massac	1 856	21 679	23 666			82 988
McDonough	36 785	28 851	7,597			276 306
McHenry	120 757	33 153	22 302	3 111		384 746
McLean	129 441	23 831	27 760	5 041	156 167	740 200
Menard	39 275	15 350	9 350	858		199 768
Mercer	80 217	23 110	17 645	2 743	50 618	347 218
Monroe	4 980	56 516	6 487			164 705
Montgomery	68 467	77 577	40 387	4 843		440 650
Morgan	89 439	61 912	..	4 187		357 454
Moultrie	26 199	8 165	6 068	2		143 196
Ogle	72 722	19 938	4 893	393		357 921

Agricultural Statistics, 1880—Continued.

Counties.	UNCULTIVATED ACREAGE.					
	Pastures.	Woodland	Uncultivated land	Area city and town real estate.	Acres not included elsewhere.	Total number of acres reported for county
Peoria	42,655	43,150	6,701	....	127,076	386,927
Perry	6,676	35,169	116,867	890	....	225,862
Piatt	32,346	2,664	12,517	29,564	....	189,587
Pike	81,100	53,714	163,865	2,695	....	511,999
Pope	2,732	164,592	9,556	300	....	229,330
Pulaski	662	80,322	....	700	....	112,676
Putnam	20,933	21,111	16,860	435	....	105,896
Randolph	9,921	55,085	6,440	....	....	202,636
Richland	11,059	36,889	13,588	649	....	151,925
Rock Island	44,455	27,620	23,271	1,229	35,674	243,296
Saline	3,392	....	....	....	....	59,887
Sangamon	89,873	16,541	5,764	6,750	....	340,398
Schuyler	27,934	58,226	78,952	3,909	....	271,702
Scott	16,163	18,266	4,512	1,096	....	101,759
Shelby	44,356	35,666	26,007	750	....	319,320
Stark	29,585	6,208	37	160	....	137,271
St. Clair	14,729	28,369	5,029	623	....	308,402
Stephenson	49,460	19,988	10,253	254	....	279,312
Tazewell	39,313	29,331	7,561	704	2,518	283,747
Union	4,164	31,865	3,216	475	10,180	114,045
Vermilion	133,252	42,592	15,111	300	13,722	471,578
Wabash	6,411	33,869	7,575	8	....	101,015
Warren	84,222	21,987	11,784	3,400	....	329,259
Washington	14,064	35,889	6,572	....	....	197,604
Wayne	26,448	54,250	117,014	80	117,501	448,940
White	8 050	86,477	34,998	2,250	15,703	255,853
Whiteside	83,005	8,726	11,964	....	112,650	429,850
Will	99,141	17,543	7,716	....	....	419,504
Williamson	11,410	120,641	12,904	300	....	253,266
Winnebago	60,526	17,981	8,503	22,364	....	286,036
Woodford	48,349	24,235	15,161	3,804	....	290 388
Total	4,438,232	3,504,058	2,070,844	215,820	1,248,851	27,096,407

Agricultural Statistics, 1880—Continued.

Counties	TIMOTHY SEED	CLOVER SEED	HUNGARIAN & MILLET SEED	GRAPES	DRAIN TILE	
	Bushels produced	Bushels produced	Bushels produced	Pounds produced	Number of feet laid in 1880	Number of feet laid previous to 1880
Adams	2 366	1 148		301 860	16 265	39 135
Alexander	30					
Bond						
Boone	2 698	1 991	61	2 200	9 800	5 720
Brown	509	469		10 432	51 188	6 620
Bureau	4 193	315	181	86 155	634 217	1 332 997
Calhoun				19 720		
Carroll	1 999	2 204	341	1 320		
Cass				6 930	33 560	314 305
Champaign	6 280	101	159	73 070		
Christian	3 527	12		63 115	386 108	233 579
Clark	884	471		10 150	13 101	30 548
Clay	13 700	122	174	9 377		
Clinton	100	64		59 000		
Coles	474	1 493	74	16 605	366 913	760 570
Cook	586	40	3 246	10 485		
Crawford				2 416	26 710	6 730
Cumberland	714	23	3	12 000	12 453	1 290
DeKalb	18 317	4 678	478	5 685	648 401	435 866
DeWitt	535	96	35	64 634	857 105	698 783
Douglas	5 250	314	2 681	23 239	853 258	183 343
DuPage	639	78	1 228	19 875	224 508	588 491
Edgar	4 321	633	212	45 335	607 816	1 817 745
Edwards	1 065	1 281		10	385	80
Effingham	1 197		23	11 130	50	
Fayette	439	280		28 565		
Ford	7 039		770	2 570	310 845	330 406
Franklin						
Fulton	6 409	5 060		150 850	451 307	960 497
Gallatin	123	541			11 100	5 193
Greene	1 117	621		11 480	74 405	670 823
Grundy	11 213	7	811	3 900	231 485	118 914
Hamilton	12			940		
Hancock	4 990	364		512 117	35 212	137 155
Hardin				2 300	9 330	
Henderson	514	67		25 580	36 347	900 936
Henry	1 706	212	142	20 125	434 651	1 899 554
Iroquois	12 475	16	3 878	85 813	207 215	477 458
Jackson	80	1 127	21	9 175		200
Jasper	45 661	50	249	27 581		10
Jefferson	56	20	2	11 979		
Jersey						
JoDaviess	1 907	2 092	6	7 780	600	
Johnson	263	987		600	300	300
Kane	5 346	376	232	180		
Kankakee	10 627	482	2 805	2 239	32 219	82 854
Kendall	9 455	1 692	350	3 780	502 980	1 433 864
Knox	5 151	423	3	45 845	724 251	2 466 073
Lake	1 932	691	713	10 371	25 615	12 530
LaSalle	22 921	406	1 417	37 730	1 243 459	1 862 445
Lawrence	247	1 681	25	12 720	970	
Lee	21 128	3 174	288	83 120	2 170	
Livingston	28 622	802	6 644	80 490	738 099	402 694
Logan	1 037		174	114 425	1 195 878	2 793 591
Macon	1 847	438		139 155	1 490 098	4 125 392
Macoupin	1 877	1 412	28	19 608	66 005	91 015
Madison			200	3 920 000		
Marion	5 394	1 200	275	10 910	830	
Marshall	1 270	108		21 600	297 564	1 081 142
Mason						
Massac				200		
McDonough	6 847	1 276		79 752	213 287	932 605
McHenry	6 801	6 424	824	19 247	965	14 249
McLean	7 144	8 749	165	85 535	2 306 770	2 516 054
Menard	206			88 000	83 875	529 580
Mercer	2 065	78	63	77 428	196 000	566 662
Monroe		893	7	83 691		
Montgomery	2 690	10	80	29 188		
Morgan	1 683	139		21 186	31 290	342 000
Moultrie	1 437	132	210	20 285	172 300	163 352

Agricultural Statistics, 1880—Continued.

Counties	TIMOTHY SEED	CLOVER SEED	HUNGARIAN & MILLET SEED	GRAPES	DRAIN TILE	
	Bushels produced	Bushels produced	Bushels produced	Pounds produced	Number of feet laid in 1880	Number of feet laid previous to 1880
Ogle	12 899	5 222	440	29 995	35 031	26 870
Peoria	3 632	790	65	72 955	396 844	1 772 606
Perry				500	2 000	
Platt	1 207	308	66	39 229	248 771	174 182
Pike	781	766	31	73 235	30 650	64 892
Pope				1 550		
Pulaski		275		48 000		
Putnam	1 849	10		500	285 776	441 998
Randolph	3	607	100	40 760		1 590
Richland	19 798	843		15 031		
Rock Island	246	30	10	130 525	31 030	187 439
Saline						
Sangamon	5 594	158		56 030	464 899	1 199 978
Schuyler	5 536	1 478	103	16 930	64 195	126 000
Scott ..	390			30 170	10 630	322 752
Shelby	1 191	36	1 282	31 455		
Stark	956	70		6 770	355 135	1 177 375
St Clair		493	8	184 902	31 633	41 150
Stephenson	911	2 531	1 312	9 360	7 980	
Tazewell	1 345	684	245	19 430	1 067 618	2 931 212
Union	12	621				
Vermilion	3 394	159	2 099	48 620	907 417	669 709
Wabash	497	3 122		3 932	7 146	
Warren	1 093	167		22 305	133 527	1 192 456
Washington	343	13	23	2 175	112	600
Wayne	13 149	320	19 757	7 485	495	2 062
White	155	2 982	8	980	62 731	181 972
Whiteside	3 713	476	23	25 430	6 650	6 975
Will	4 468	1 941	11 272	3 435	1 173 307	2 362 263
Williamson	18	2 420	3	1 695		600
Winnebago	415	1 330	511	5 396	32 110	
Woodford	7 264	1 820	150	115 758	1 212 199	1 310 669
Total	400 124	87 144	60 789	7 832 041	22 030 472	44 880 760

Agricultural Statistics, 1880—Continued.

Counties	Fat Sheep Sold		Sheep Killed by Dogs		Wool
	Number	Gross weight pounds	Number	Value	Number pounds shorn
Adams	3 642	341 202	428	$1 612	78 086
Alexander	183	12 340	171	234	1 496
Bond					
Boone	3 004	249 741	421	1 357	91 216
Brown	3 150	243 461	276	898	46 335
Bureau	2 464	298 690	211	996	65 356
Calhoun	76	10 300	25	52	3 111
Carroll	799	90 324	41	151	26 377
Cass	950	51 905	234	770	12 940
Champaign	1 516	154 545	132	385	55 437
Christian	1 390	138 313	220	572	65 656
Clark	2 066	196 872	647	1 767	94 507
Clay	977	102 037	641	1 629	44 047
Clinton	2 220	100 228	284	396	31 852
Coles	2 878	197 589	221	781	30 415
Cook	251	17 475	19	40	10 181
Crawford	2 680	200 466	223	677	56 362
Cumberland	438	41 375	208	561	15 791
DeKalb	1 564	166 208	210	798	64 390
DeWitt	3 035	310 340	350	1 059	58 418
Douglas	1 858	202 030	149	463	32 211
DuPage	2 844	317 113	104	339	65 800
Edgar	5 234	459 033	426	1 509	66 638
Edwards	1 495	143 076	126	407	50 816
Effingham	648	49 770	232	589	19 721
Fayette	1 710	183 596	544	1 445	45 097
Ford	163	15 610	19	66	10 630
Franklin					
Fulton	4 771	275 860	706	2 406	102 179
Gallatin	564	54 135	191	352	7 452
Greene	5 164	465 826	524	1 487	97 092
Grundy	449	87 990	110	270	10 297
Hamilton	1 567	146 500	296	577	26 937
Hancock	727	71 318	287	856	18 229
Hardin	443	38 595	72	114	4 304
Henderson	1 142	119 006	36	135	12 476
Henry	983	113 893	[illegible]	302	34 661
Iroquois	3 201	342 695	233	721	25 857
Jackson	1 310	62 625	233	608	9 773
Jasper	1 063	85 669	606	1 015	27 556
Jefferson	1 766	159 140	490	1 170	32 736
Jersey					
JoDaviess	3 344	321 056	353	1 178	58 644
Johnson	322	34 710	117	362	9 242
Kane	3 666	287 112	140	527	55 336
Kankakee	979	115 718	50	185	11 101
Kendall	2 484	233 246	300	1 082	44 745
Knox	4 418	384 972	759	2 418	95 742
Lake	9 494	753 120	544	1 665	336 009
LaSalle	3 258	381 282	405	2 075	94 438
Lawrence	865	97 468	237	727	33 109
Lee	890	76 121	212	570	33 987
Livingston	610	68 436	175	605	28 720
Logan	2 656	204 040	145	625	56 726
Macon	2 825	245 406	118	534	61 472
Macoupin	4 092	423 517	1 074	3 614	134 013
Madison	2 400	204 000	150	456	111 000
Marion	2 547	181 363	425	1 094	45 065
Marshall	212	23 580	120	329	20 434
Mason					
Massac	191	15 009	52	100	2 071
McDonough	2 602	179 527	344	1 017	38 978
McHenry	9 312	860 756	341	1 102	244 313
McLean	4 101	506 [illegible]	528	2 037	152 848
Menard	1 983	188 300	149	447	53 948
Mercer	1 657	129 467	210	713	37 888
Monroe	147	13 285	32	104	5 084
Montgomery	3 266	247 694	581	1 054	80 744
Morgan	3 296	329 600	345	1 380	67 600
Moultrie	918	98 505	52	170	20 744
Ogle	2 017	230 216	161	573	64 438
Peoria	1 544	147 840	254	981	59 214

Agricultural Statistics, 1880—Continued.

Counties	FAT SHEEP SOLD		SHEEP KILLED BY DOGS		WOOL
	Number	Gross weight pounds	Number	Value	Number pounds shorn
Perry	252	22 480	99	$255	3 831
Piatt	311	23 665	93	331	8 789
Pike	1,704	159 338	635	1 831	61 151
Pope	903	81 417	147	253	17 050
Pulaski	400	32 000			3 000
Putnam	324	19 170	29	120	13 624
Randolph	2 830	216 615	355	998	47 613
Richland	860	57 917	335	973	37 008
Rock Island	487	43 289	57	146	15 889
Saline	946	89 890	135	275	17 485
Sangamon	4 883	417 235	529	1 963	91 608
Schuyler	1 817	113 672	247	703	27 063
Scott	1 163	102 720	280	1 092	40 707
Shelby	3 012	286 132	330	1 088	69 826
Stark	2 020	251 705	272	894	50 778
St Clair	1 989	178 550	141	447	21 765
Stephenson	2 085	235 950	284	990	69 532
Tazewell	1 745	155 029	154	404	49 149
Union	661	67 [illegible]	182	342	9 643
Vermilion	4 945	443 [illegible]	534	1 725	140 429
Wabash	818	86 281	73	271	20 913
Warren	1 46[illegible]	160 175	16[illegible]	[illegible]94	48 738
Washington	1 828	165 583	536	1 150	15 638
Wayne	2 280	189 963	519	1 182	14 912
White	499	37 230	202	573	21 695
Whiteside	771	77 580	88	465	43 323
Will	1 187	107 490	115	479	33 866
Williamson	1 599	123 082	288	609	27 734
Winnebago	2 482	190 408	299	1 094	83 608
Woodford	653	58 620	129	578	21 000
Total	193 384	17 807 358	26 107	$79 269	4 757 938

Agricultural Statistics, 18 0—Continued.

Counties	DAIRY					FAT CATTLE	
	Cows No kept	Butter No lbs sold	Cheese No lbs sold	Cream No gallons sold	Milk No gallons sold	No sold	Gross weight
Adams	7 164	202 733	4 04[illegible]	2 475	328 140	4 422	4 413 584
Alexander	442	4 771				271	150 125
Bond							
Boone	9 [illegible]83	562 868	824 903		824 094	3 01[illegible]	2 9[illegible]7 984
Brown	3 061	57 214		50	7 570	1 8[illegible]	1 70[illegible] 7[illegible]4
Bureau	9 759	370 690	31 606		3 841	12 016	13 5[illegible]0 109
Calhoun	1 289	7 190				321	161 545
Carroll	9 213	293 538	16 815	20 250	830 111	8 012	7 269 076
Cass	520	12 209	1 050		1 360	4 566	5 827 533
Champaign	6 720	205 615	36 200	440	106 530	7 043	7 868 057
Christian	5 543	118 031	6 675		30 127	8 854	9 8[illegible]3 334
Clark	3 645	86 606				2 184	2 202 196
Clay	2 991	70 310			550	740	519 884
Clinton	3 359	78 956	1 175		70 110	1 514	891 641
Coles	3 071	84 548	400	150	25 625	5 558	6 066 998
Cook	20 777	633 028	270 450	9 990	5 421 153	3 11[illegible]	2 156 [illegible]07
Crawford	3 147	66 417	450		50	1 30[illegible]	1 287 308
Cumberland	2 437	34 340			100	1 319	1 316 121
DeKalb	21 897	1 471 288	478 369	10 445	1 665 561	6 908	8 370 618
DeWitt	3 413	112 612	320	88	19 370	3 618	4 717 295
Douglas	3 560	131 03[illegible]	200	200	4 512	6 221	6 97[illegible] 684
DuPage	13 836	371 140	400	200	5 361 334	3 474	3 0[illegible]5 390
Edgar	4 056	120 809	122	521	7 8[illegible]2	14 887	1[illegible] 572 236
Edwards	2 373	2[illegible] 041	175		180	807	659 605
Effingham	4 381	8[illegible] 541		8	9 271	1 256	1 08[illegible] 271
Fayette	4 712	115 921			5 065	1 623	1 247 2[illegible]8
Ford	2 966	107 214	8 000		5 410	2 12[illegible]	2 32[illegible] 158
Franklin							
Fulton	9 268	2[illegible]5 876		150	58 505	7 938	8 347 182
Gallatin	1 5[illegible]7	18 972			680	1 989	1 533 580
Greene	3 708	142 146	1 250	1 250	327	9 105	9 521 695
Grundy	5 176	316 593	1 000	3 921	99 975	4 081	4 112 954
Hamilton	2 243	8 660				1 5[illegible]9	1 131 44[illegible]
Hancock	7 746	259 482	5 089		2 065	8 714	9 808 42[illegible]
Hardin	482	6 300			150	484	2[illegible]0 851
Henderson	2 031	[illegible]	[illegible] 275		380	4 886	4 [illegible]5 081
Henry	13 242	497 833	105 583	15 732	28 360	9 410	11 [illegible]25 006
Iroquois	11 162	1 160 246	4 890	100	252 808	7 303	8 453 787
Jackson	2 731	60 621		930	155	1 929	1 504 119
Jasper	3 326	50 986	395		1 510	1 179	8[illegible]2 510
Jefferson	3 661	53 539	200	100	370	1 713	1 418 364
Jersey							
JoDaviess	11 053	548 440	17 330	1 788	12 460	8 055	7 595 974
Johnson	1 437	6 610				90[illegible]	565 768
Kane	25 6[illegible]3	731 268	237 600	7 964	9 465 793	8 [illegible]71	7 774 896
Kankakee	7 819	334 506	428 880	29 654	276 545	4 051	4 214 276
Kendall	7 700	484 717	38 672	2 060	583 562	4 404	4 557 474
Knox	14 887	297 068	263 276	2 718	477 130	10 964	12 645 350
Lake	11 328	655 272	158 210		2 269 639	2 906	3 344 652
LaSalle	17 598	805 057	339 900	2 945	188 575	15 022	16 371 512
Lawrence	2 972	45 257	30		300	1 630	1 0[illegible]8 211
Lee	12 861	980 129	71 123	80 479	283 119	8 076	9 912 072
Livingston	11 135	512 013	7 485	401	66 773	6 593	5 572 071
Logan	4 921	138 904	5 550	15	25 380	4 952	5 516 [illegible]43
Macon	4 733	156 355	60	14 250	35 870	5 676	6 [illegible]33 872
Macoupin	7 706	143 907	2 125	650	446 423	7 205	7 [illegible]41 437
Madison	6 750	202 500	31 700	5 200	337 000	1 680	1 763 000
Marion	4 197	83 775	10 258	27	70 440	2 631	1 787 487
Marshall	4 555	83 540	80 170	300	71 327	2 743	2 814 956
Mason							
Massac	1 099	32 118	1 000		83	1 844	1 389 514
McDonough	5 786	158 126				7 878	9 255 687
McHenry	23 986	1 284 470	1 912 028	7 600	3 719 413	6 [illegible]7	5 748 580
McLean	9 289	312 023	4 135	2 530	80 235	13 537	16 417 330
Menard	2 539	50 160	303	48	10 353	5 432	6 518 400
Mercer	7 476	191 630	1 190		44 220	14 604	9 281 180
Monroe	1 472	42 086	1 668		1 575	531	357 430
Montgomery	5 707	184 49[illegible]		40	19 790	4 865	5 398 803
Morgan	3 189	121 986		32 429	297 873	12 943	16 725 900
Moultrie	2 626	59 448	450		560	3 289	3 524 271
Ogle	15 294	899 858	72 860	93 806	378 425	10 933	12 297 642
Peoria	6 953	257,409	83 500	11 000	236 365	4 706	5 088 [illegible]57

Agricultural Statistics, 1880—Continued.

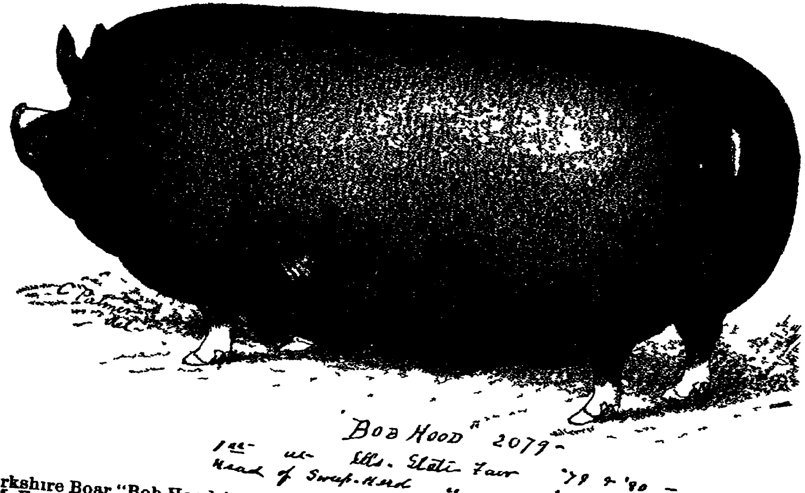
Counties	DAIRY					FAT CATTLE	
	Cows No kept	Butter No lbs sold	Cheese No lbs sold	Cream No gallons sold	Milk No gallons sold	No sold	Gross weight
Perry	282	19 403	760	8	4 365	716	546 670
Piatt	2 176	63 567		3	7 845	1 983	1 723 041
Pike	4 764	123 021	828	426	14 732	3 991	5 147 203
Pope	1 581	16 489				893	503 206
Pulaski	2 500	2 500				1 800	1 260 000
Putnam	1 351	45 781				2 489	2 794 030
Randolph	3 883	82 808	8 280		572	1 984	1 251 742
Richland	3 812	48 730	2 262	170	5 780	1 553	850 600
Rock Island	5 705	288 819	1 000	790	134 760	5 436	6 220 564
Saline	1 780	15 119				1 233	716 970
Sangamon	6 389	181 175	45 600	3 950	214 675	14 842	15 094 353
Schuyler	4 158	68 879		10	59	3 177	3 749 736
Scott	1 733	45 690			512	4 414	5 702 050
Shelby	6 199	126 530		100	35 600	4 100	2 411 194
Stark	3 329	95 286	500		47 310	3 575	3 676 912
St Clair	5 007	192 321	11 120		20 371	1 355	1 178 920
Stephenson	12 603	962 746	19 020	5 477	91 872	5 642	5 267 776
Tazewell	6 250	195 866	58 464	137 900	24 010	5 167	4 803 959
Union	1 899	42 109		1 100	5 125	951	574 797
Vermilion	6 861	186 205	20 000	640	68 497	11 663	14 936 736
Wabash	910	15 032				759	516 800
Warren	4 966	140 418	52 120	280	12 760	11 246	14 058 608
Washington	3 804	77 5[illegible]	355		130	1 769	1 126 233
Wayne	3 939	31 411	400			2 792	1 933 723
White	3 056	30 105	8		169	1 097	1 102 816
Whiteside	14 165	878 286	37 853	60 119	91 389	7 784	7 874 285
Will	18 154	937 020	207 656	21 945	2 521 241	8 956	8 719 290
Williamson	2 060	24 415				978	671 654
Winnebago	12 006	1 011 745	143 359	5 492	1 100 444	6 069	6 254 037
Woodford	5 147	154 737	2 555		12 204	3 799	4 610 410
Total ..	613 738	24 553 449	6 187 680	601 314	38 986 861	473 727	493 554 661

Agricultural Statistics, 1880—Continued.

Counties	FAT HOGS SOLD		HOGS AND PIGS DIED OF CHOLERA		HORSES	
	Number	Gross weight	Number	Gross weight	Number colts foaled	Number died (any age)
Adams	47 234	13 057 486	13 713	904 430	807	479
Alexander	815	167 204	520	19 830	46	64
Bond						
Boone	20 852	5 728 527	452	39 895	499	148
Brown	16 394	3 665 578	3 712	224 615	450	202
Bureau	73 462	20 916 097	23 909	2 331 526	1 925	738
Calhoun	3 426	766 370	1 427	87 585	132	100
Carroll	35 822	1 406 607	9 314	310 600	823	287
Cass	11 686	2 373 200	4 932	303 877	290	159
Champaign	51 018	11 667 652	4 469	313 525	1 413	943
Christian	44 493	10 921 004	9 347	555 020	1 131	702
Clark	12 574	2 706 850	5 236	362 080	360	323
Clay	7 260	1 461 019	2 306	113 570	453	256
Clinton	12 637	1 901 445	1 468	76 721	418	341
Coles	23 921	5 595 397	9 566	362 426	456	337
Cook	14 203	2 429 379	221	21 774		
Crawford	14 832	3 345 141	6 999	461 143	390	258
Cumberland	9 824	2 058 680	1 682	283 675	255	200
DeKalb	55 196	15 583 242	2 729	236 370	1 421	534
DeWitt	28 643	6 851 837	8 825	587 270	796	399
Douglas	23 175	5 484 225	8 733	570 853	619	306
DuPage	17 413	4 464 400	741	49 430	642	344
Edgar	36 885	7 978 573	7 709	517 188	853	633
Edwards	7 837	1 545 331	6 305	42 483	164	149
Effingham	9 131	2 194 632	3 201	221 843	339	359
Fayette	18 730	3 332 775	4 252	235 526	610	422
Ford	26 438	5 590 813	1 241	96 520	582	300
Franklin						
Fulton	63 782	10 368 432	17 668	1 154 961	1 628	607
Gallatin	11 300	1 645 248	6 433	108 764	188	178
Greene	32 310	8 103 370	7 772	474 048	731	291
Grundy	18 418	4 882 265	735	74 065	592	240
Hamilton	2 608	05 769	8 184	613 302	352	258
Hancock	52 366	11 051 748	9 477	676 870	1 449	547
Hardin	1 991	413 758	1 119	61 [illegible]	74	38
Henderson	24 790	7 380 553	12 581	624 120	655	275
Henry	81 320	24 250 668	13 275	1 015 059	1 836	612
Iroquois	57 102	13 512 628	6 641	381 820	1 720	1 230
Jackson	3 504	703 737	3 972	203 780	278	175
Jasper	8 459	1 821 077	2 430	140 630	355	365
Jefferson	6 985	1 320 165	6 049	393 185		
Jersey						
JoDaviess	39 195	7 858 484	13 781	1 231 355	863	380
Johnson	4 185	923 246	373	23 535	209	103
Kane	30 300	7 224 355	2 040	141 830	806	330
Kankakee	28 974	6 553 999	972	72 510	857	441
Kendall	27 496	7 752 880	320	29 364	487	224
Knox	56 416	17 625 342	22 816	1 650 890	1 794	663
Lake	17 581	4 046 008	130	13 360	546	190
LaSalle	67 302	19 182 789	6 139	431 078	2 535	1 010
Lawrence	9 597	2 015 927	6 156	315 465	248	259
Lee	26 071	6 670 878	3 810	391 276	1 017	498
Livingston	76 036	16 885 692	3 546	273 280	1 925	1 065
Logan	41 396	10 144 702	7 165	533 125	881	492
Macon	43 084	10 163 772	4 004	267 455	1 138	591
Macoupin	38 896	9 542 491	10 257	766 430	1 257	630
Madison	21 050	4 210 000	1 300	131 400	750	300
Marion	10 354	2 083 062	1 435	80 415	605	418
Marshall	27 782	8 356 648	3 815	198 846	550	218
Mason						
Massac	1 435	311 727	314	32 960	54	56
McDonough	56 224	12 817 932	13 204	1 114 256	1 535	531
McHenry	37 872	9 240 121	758	61 955	909	258
McLean	85 091	20 287 500	12 773	905 428	2 497	1 132
Menard	18 562	3 712 410	7 350	441 099	533	175
Mercer	46 683	12 811 490	22 924	1 470 220	1 530	509
Monroe	1 766	623 698	347	1 700	174	184
Montgomery	43 607	6 490 544	7 277	571 062	852	492
Morgan	39 982	8 248 376	5 240	524 600	621	223
Moultrie	18 092	3 477 788	10 837	843 564	571	372
Ogle	46 110	12 630 735	5 787	340 770	1 364	611
Peoria	41 836	12 717 663	12 010	886 724	930	401

Agricultural Statistics, 1880—Continued.

Counties.	FAT HOGS SOLD.		HOGS AND PIGS DIED OF CHOLERA.		HORSES.	
	Number.	Gross weight.	Number.	Gross weight.	Number colts foaled.	Number died (any age).
Perry	1,496	248,002	85	2,200	43	33
Piatt	16,431	3,640,476	3,032	283,200	411	326
Pike	43,554	9,187,306	9,396	502,832	730	391
Pope	3,322	634,090	1,297	60,969	118	82
Pulaski	3,500	875,000	300	25,000	275	26
Putnam	15,145	3,529,299	2,827	360,600	324	119
Randolph	4,862	973,438	3,157	236,542	417	279
Richland	6,518	1,360,364	3,838	193,223	300	284
Rock Island	29,803	8,660,282	10,745	797,519	747	278
Saline	3,791	727,700	3,258	254,780	224	99
Sangamon	50,378	12,887,944	12,078	871,557	1,344	634
Schuyler	19,906	5,089,196	3,060	196,774	657	287
Scott	26,651	6,598,290	3,070	194,350	270	160
Shelby	34,367	6,941,749	6,267	319,064	....	....
Stark	29,216	8,266,569	2,093	141,175	751	253
St. Clair	5,693	1,475,860	1,000	81,475	380	297
Stephenson	38,334	10,442,287	9,897	232,574	1,021	480
Tazewell	33,053	8,323,124	8,674	344 063	1,207	533
Union	2,721	446,181	2,187	184,089	228	148
Vermilion	53,632	12,121,969	4,876	371,906	1,293	798
Wabash	6,730	1,433,160	3,430	171,075	201	129
Warren	46,897	21,432,983	22,084	1,404,517	1,505	623
Washington	4,012	839,146	1,539	123,035	582	369
Wayno	8,863	1,890,471	7,257	774,220	611	445
White	9,288	2,051,809	10,087	692,526	365	275
Whiteside	44,149	11,265,745	14,479	1,073,777	1,439	496
Will	34,886	8,644,588	927	94,383	1,376	607
Williamson	3,836	728,318	6,019	421,985	425	202
Winnebago	32,989	9,298,756	1,746	164,346	750	317
Woodford	36,793	9,847,130	5,118	273,238	1,050	432
Total	2,642,606	656,485,450	590,025	41,066,533	72,764	36,087


C. Palmer del.
"Bob Hood" 2079.
1st at Ills. State Fair '79 & '80 —
Head of Sweep. Herd " '80 & '81 —

Berkshire Boar "Bob Hood" exhibited by J W Boston, Jacksonville Ill ; now owned by A. M. Fulford, Bel Air, Md. Head of Prize Pen—Boar and four Sows, State Fair, 1881.—p 393

APPENDIX

The Culture and Management of our Native Forests, for Development as Timber or Ornamental Wood.

BY H. W. S. CLEVELAND.

Man's progress from barbarism to civilization is indicated by the degree of skill he has attained in the cultivation of those products of the earth which minister to his necessities and comfort. As long as the natural resources are sufficient to supply his primary wants of food and clothing, he will make no effort to increase them, and it is only as he is driven by the necessities of increasing demand and diminishing supply that he exerts himself to secure relief by artificial means.

The first efforts of the savage at cultivation are of the rudest description, and just in proportion as tribes and nations advance in numbers, power and intelligence, do they also gain in improved methods of tillage, in greater knowledge of the science of culture, and in better implements and machinery for its performance.

These are simple truths, which every one will recognize. Their application to the subject of forest culture, lies in the obvious fact that it is not until a nation has reached mature age, and an advanced stage of civilization, that the native growth of wild forest proves insufficient for the increasing demand for timber, and the necessity of providing, by artificial culture, for an additional supply, begins to be felt.

We could hardly have a more striking illustration than is here afforded, of the adaptation of the provisions of nature, first, to the immediate necessities of existence, and subsequently to the development of the latent powers of the human race. The cereals and vegetables which are essential to man's daily support are of annual growth. Their culture is comparatively simple, and he soon learns that his very existence is dependent upon their renewed production with each recurring summer. The forests are equally essential to his further development, by furnishing material for the construction of houses and ships, and the countless implements by whose aid he attains to almost superhuman power. But the forest requires the lifetime of two or three generations for the full attainment of maturity. In the infancy of the race, the necessity of providing for such distant wants could not be foreseen.

Nature, therefore, as if she had been conscious that forest culture was too arduous an undertaking for primitive man, has furnished so abundant a supply, that no deficiency or necessity of economy is felt till the nation has acquired such a degree of intelligence as to be competent to the solution of the problem.

And this is the point at which we now stand, and which the older nations of Europe have long since passed, seeing plainly that our natural sources are well nigh exhausted, yet shrinking from the unfamiliar task of seeking to supply the deficiency by artificial means.

Many once powerful nations have dwindled into insignificance in consequence of their neglect of this lesson which nature imperatively demands that we should learn. Their fate should be to us a warning, as the efforts of the most intelligent nations of to-day should be to us an example, to save us from a like fate. The necessity for action is imminent, and can not be averted. The subject of the increasing demand and rapidly diminishing supply of timber throughout the country, has been so thoroughly discussed by legislative committees, both State and National, by agricultural societies and by able individual writers, that it would seem but a waste of time to bring forward the oft-repeated statistics in evidence of the danger that threatens us, and the urgent need of adopting measures of protection and relief.

Assuming, therefore, that my readers are familiar with the data which prove the necessity, I pass at once to the consideration of the means of averting the danger.

The only measure of relief thus far suggested with any definite prospect of success, is the planting of new forests. Much has been said, it is true, about the preservation of those that remain; but the words seem meaningless, in view of the fact that private property is beyond the control of the Government, and Congress declines even to grant means to prevent the destruction of that which still pertains to the public domain.

The planting of new forests is indeed an all-important work, which can not be too strongly urged, but we have not yet reached the period when it is likely to be successfully inaugurated, except, perhaps, in occasional instances by railroad or manufacturing companies, with a view to their own future wants. Individuals will not engage, to any great extent, in a work which demands the investment not only of a large amount of money, and the continuous expenditure of a great deal of labor, but also of a long period of time, which is the one form of capital of which we never have a surplus. It behooves us, therefore, to study rather more closely than we have heretofore done, the possibility of improving the condition of that which remains. The woods still standing contain a vast amount of available material which is susceptible of development in far less time than would be required for the planting and growth of new forests, our utter neglect of which furnishes one of the most striking proofs of our ignorance of forest culture.

No one can travel through any portion of the States east of the prairie regions, without being impressed by the fact that he is never out of sight of woodland. In fact, the chief cause of the prevailing apathy on the subject of forest planting, arises from the fact of the great abundance of groves and extended forests, which convey the impression, in spite of the assertions of statisticians, that there is still enough wood growing to supply the place of that which is removed.

The Duke of Argyle, in the interesting sketch of his trip through the States, published after his return to England, says emphatically that nothing in the asp ct of the country surprised and impressed him so much as the great amount of wood still remaining, and everywhere giving beauty and variety to the landscape; but he

Such a criticism is not surprising from one who like most country gentlemen of England, is familiar with the process of forest culture, but it certainly is surprising that, with all our boasted intelligence, we still remain practically insensible to the fact that, while almost every tract of woodland contains a large percentage of such trees as are most valuable for timber, already well advanced in growth, and susceptible, by judicious management, of being developed into proper form and size for use in far less time and at far less cost than would be required for the planting and growth of new forest; yet, if left to themselves, not one tree in a thousand will ever be fit for anything better than fencing stuff or fuel Vast resources of wealth are lying latent and running to waste in our woodlands, and we stand stupidly unconscious of the fact that its development requires simply the application of the intelligent culture we bestow on all other crops. In many instances, it is true, the native woods have been so long neglected, that they are past redemption, but there are, nevertheless, large areas of continuous forest, and smaller groves and woodlots in every section of the country, now yielding no revenue, which might, by proper annual thinning, pruning and culture, be developed into timber forests of very great value, while yielding an annual crop of firewood in the process.

Where shall we find, or how shall we create, the men who are competent to the work? To judge from invariable practice, our people seem not only to be ignorant of the first principles of forest culture, but unconscious even of the possibility of its application to the development of our native woods. The fact of such prevailing ignorance rests not alone upon negative evidence. We have positive proof in abundance in the attempts which we often see at the "improvement" of a piece of woodland when it is appropriated as the site of a residence. It is hard to conceive of anything more dismal and forlorn than the average result of the effort to impart a homelike aspect to such a place; the dwelling, with its "span new" expression, standing in the midst of a multitude of tall poles, with tufts of leaves upon their tops, looking like fowls stripped of their feathers, and the bare ground fretted everywhere with freshly upturned roots, the sole remnants of the wild shrubbery which has been ruthlessly exterminated.

In order to a comprehension of the principles of healthy forest growth, let us consider some of the processes of nature, and learn from them her requirements.

If we plant the seed of a maple, chestnut, linden, oak or ash tree by itself in the open ground in suitable soil, and suffer it to grow without molestation, simply guarding it from injury, we shall find that the first act of the young plant is to send out broad leaves, which serve among other purposes to shade completely the stem, and the ground immediately around it in which the roots are growing. As the tree grows, it preserves a symmetrical shape, the limbs spreading and the trunk increasing in size, in proportion to its height, but always preserving the condition of keeping the trunk and the ground for a considerable distance around it, in the shadow of the foliage till mature age, when the roots have penetrated to such a depth as to be safe from injury, and the trunk is protected by thick layers of cork-like bark, which safely guards alike from heat and cold the inner layers and young wood in which the sap is performing its functions.

Such are the conditions to which nature adheres, if not interfered with by accident or design, and such, therefore, we may be sure, are those best adapted to healthy and vigorous growth. The fact that they are continually violated with apparent impunity, serves only to show the wonderful power of nature to supply deficiencies, and adapt herself to circumstances, but in artificial culture, we should aim as nearly as possible to imitate the course she would pursue if unimpeded.

The requirements of nature are of course the same when trees are growing together in a forest, as when they stand singly, but the conditions of growth are so changed that the end is attained by entirely different means.

If we enter a tract of woodland, covered with a hard wood growth of an average height of thirty or forty feet we find it composed almost exclusively of trees which have run up to a great height in proportion to the spread of their limbs. The largest and oldest of them may have had some lateral branches which are now dead, but the younger growth will consist only of tall, slender stems, without a branch or leaf except near the top. It will be difficult, perhaps impossible, to find a single tree possessing sufficient symmetry of form to be worth transplanting for ornamental use. A little reflection will serve to convince us that this form of growth, so different from that of the single tree in the open ground, is the natural result of the action of the same rules under changed conditions.

When a young wood first springs up on open ground, each tree begins to grow as if it were alone, sending out lateral branches and preserving its just proportion. But whenever these laterals meet and mingle with each other, they shut out the sunlight from all below, and thence forward all lateral growth must cease, and each individual is struggling upward to keep even with its neighbors and secure its share of the sunbeams which are essential to its existence, and which can only be had at the top. It thus becomes forced out of all just proportions in the effort to keep even with its fellows. The conditions of keeping the trunk and roots in the shade, however, are even more rigidly adhered to than in the case of the single tree, growing by itself, for the whole area of the wood is shaded, and, moreover, the trees on the edges of the wood, if not interfered with by men or cattle, will be clothed on the outer side with limbs and foliage, clear to the ground, so as to check the free passage of the winds whose drying influence upon the soil is even more active than that of the sun.

If we examine more closely we shall find that nature adapts herself to these changed conditions, and avails herself of whatever advantages they afford.

The single tree when growing by itself sends its roots deep into the ground in search of the moisture which cannot be had near the surface, and thus, when it reaches mature age, it draws its supplies from sources beyond the reach of temporary changes, and, moreover, secures so firm a hold upon the ground that it suffers no injury from the storms that assail it, but fearlessly stretches forth its arms as if to challenge the gale.

In the woods, on the contrary, the surface soil never becomes parched or heated, but maintains an even degree of temperature and moisture in consequence not only of the exclusion of the sun and winds, but of the deep mulching of leaves which annually cover the ground and keep it moist, while, by their decomposition, they form a rich mould comprising all the ingredients of vegetation.

If we dig only a few inches into this mould we find it everywhere permeated by fibrous rootlets emanating from larger roots, which under these circumstances have kept near the surface where they draw nourishment from the rich material there provided. If the single tree in the open ground had tried to live by such means, it would speedily have perished for want of nourishment, or would have been uprooted by the winds as forest trees are liable to be when left alone in a clearing.

In the woods the necessity no longer exists of sending the roots to a great depth either in search of nourishment or for support against storms, and nature always adapts hereself to circumstances and attains her ends by the simplest and most economical means.

If we now consider the facts I have stated, which any one can easily verify for himself, we shall find that all the essential principles of tree culture are comprised within their limits, and by their rational observances we may secure healthy and vigorous trees, and develop at will either such forms as will fit them for timber or for ornamental use.

The five trees I have cited—maple, chestnut, linden, oak and ash—are among the most common and yet the most valuable of our forest trees, and may be taken as representatives and proper illustrations of the facts I am stating. Either of these trees, if growing by itself in proper soil and undisturbed by other than natural influences, will attain, at maturity, a height of seventy or eighty feet, with a spread of limb equal in diameter to its height, and a trunk of such massive proportions as leaves no room for apprehension of inability to uphold the wilderness of foliage it has to support. But these same trees, if growing in a wood, will send up a slender stem, straight as an arrow, fifty, sixty or seventy feet without a limb or a leaf, till it reaches the average height of its fellows, and sends out its tufts of foliage to secure the benefit of every sunbeam it can catch.

We see therefore, that if we wish to form a beautiful and symmetrical tree, or a grove of such, composed of individual specimens of majestic and graceful proportions, we must allow it free access to sun and air, with full power of expansion on every side. While young, however, the growth will be more vigorous and healthy, and we can develop the desired forms more easily and sucessfully by leaving a much greater number of trees than are eventually to remain, and removing from year to year all which are near enough to the final occupants to check or impede their full development.

If, on the other hand, we wish to develop the trunk or bole for use as timber, we must plant, or suffer the trees to grow more thickly together, and thus extend the trunk longitudinally by forcing it to ascend in search of the sunlight on which its very existence is dependent. The indigenous growth, however, is always a great deal too thick for successful development. The trees are so crowded that many of them perish in the struggle, and those which survive are drawn up into such spindling proportions that not one in a hundred ever attains the dignity of timber, whereas by proper and reasonable thinning, and judicious culture and pruning of the trees selected for final retention, every acre of woodland might be made to yield an annual crop of fire-wood, and all the while be growing timber which eventually in many instances might be worth more than the land itself; or by a different process of management may be converted into a grove of majestic and graceful ornamental trees.

The proper performance of this work constitutes the most important part of forest culture, and for want of the knowledge of how it should be done, or from ignorance of the possibility of its application to our native forest, a vast area (in the aggregate) of woodland is running to waste, yielding no revenue and promising nothing better in the future than fire-wood, of which a very large proportion is yet susceptible of redemption and conversion into timber of great value at far less cost of time and labor than would be required for the planting and rearing of new forests, while the very process of development would be yielding an annual income instead of demanding large outlays.

Travel where we may we are never out of sight of forest, and every wood-lot is a mine of wealth waiting only the application of intelligent labor for its development. In almost every tract of woodland may be found more or less of the trees I have named, and in many places also hickory, walnut, butternut, elm, cherry, beech and other valuable timber trees, mingled with a great variety of those which are worthless, or fit only for fuel. In some cases they are past redemption, having been so long neglected that they have run up into mere thickets of hooppoles. Young growth may everywhere be found, however, which are in condition to be taken in hand, and in almost all cases the work of thinning and pruning may be entered upon with a certainty of profitable results if wisely and perseveringly conducted.

The work of thinning, as ordinarily conducted in the occasional instances in which on any account it has become desirable, is entrusted to mere laborers, who have no regard for the natural conditions which are essential to healthy growth, and which can not be suddenly changed without serious injury to the trees that are left.

All the small growth of shrubs, such as hazel, cornel, dogwood, elder, shad-bush, etc., is first grubbed out and destroyed under the general term of "underbrush," and this not only throughout the interior of the wood, but round its outer edges, where such shrubbery is apt to spring up in thickets, which serve the very important purpose of preventing the free passage of the wind over the surface soil of the interior, besides adding incalculably to the beauty of the wood, as seen from without by connecting the line of foliage of the trees, with that of the sward below, and presenting a living mass of verdure. The trees which are considered most desirable to preserve, are then selected, and all the rest at once removed. Finally the leaves are carefully raked from the surface and carried off or burnt.

Sun and wind now have free access to the soil, and it very soon becomes parched and dry. The fine rootlets near the surface, which have heretofore been preserved by the never-failing moisture of the rich mould under its mulching of leaves, are converted into a mass of wiry fibres, no longer capable of conveying nourishment, even if it were within their reach. And while the means of supply are thus reduced, the tall, slender trunk, through which the sap must ascend to the leaves, is now exposed to the free action of the sun and winds. Now I do not presume to say, that evaporation can take place through the bark, but the provision which nature makes to guard the inner vital tissues from the effect of the sun's rays indicates, beyond all question, that they are in some way injurious. I have elsewhere shown that in the case of the single tree growing by itself, the trunk is always shaded by the spreading foliage, when suffered to retain its natural form. In the forest, the trees shade each other, and thus effect the object by mutual action. But now let me call your attention to another provision of nature which few people observe, but the meaning of which is too obvious to be mistaken. If we examine the bark of an oak, elm, chestnut or maple, of mature age, which has always stood by itself, exposed to the full influence of atmospheric changes, we find it to be of great thickness, of very rugged character, and of a cork-like consistency, all of which characteristics make it the best possible non-conductor of heat or cold that can be imagined, under the protection of which the living tissues are safely kept from injury through the burning heat of summer and the intense cold of winter.

Now go into the forest where the trees shade each other, and wind and sun are excluded, and you will find that the bark of the trees is smooth and thin in comparison with that of those in the open ground.

Nature never wastes her energies needlessly, and the trees in the woods do not require the thick coat of those that are exposed. But the effect of suddenly admitting the sun and wind upon them is precisely the same as that of exposing any portion of the human skin which had heretofore been clothed. It is to guard against injury from this source that experienced tree-planters, when removing large trees from the woods, are accustomed to swathe the trunks with ropes of straw, which is a rational process, yet it is by no means uncommon to see the reverse of this action. I have seen, during the past winter, a great many very large fine trees planted on the best avenues in Chicago, at a cost of certainly not less than fifty dollars each, from the trunks and large limbs of which all the rough bark had been carefully scraped, leaving only a thin, smooth covering over the inner tissues. This is as if a man should prepare for unusual exposure to heat or cold by laying aside all his clothing.

Few persons, even among those whose business is tree culture, as fruit-growers and nursery men, have any just conception of the value of thorough mulching, as a means of promoting the health and vigor of growing trees. In fact, such a mulching of the whole ground as nature provides in the forest by the annual fall of the leaves, may be said to be unknown in artificial culture, so rarely is it practiced, yet its immediate effect in promoting new and vigorous growth is such as would seem almost incredible to one who had not witnessed it, and affords one of the most beautiful illustrations of nature's methods of securing the most important results by such simple and incidental means that they escape our notice, though going on right under our eyes from year to year.

Of course the richest food for plant consumption is in the soil near the surface, but if that soil is subjected to alternations of temperature and moisture, sometimes baked in clods, and at others reduced to the consistency of mire, no roots can survive the changes. In the forest, as I have elsewhere said, these changes are prevented by the shade of the foliage and the mulching of fallen leaves. The rich mould of the surface soil maintains an even temperature, is always moist, and is everwhere permeated with fibrous roots drawing nourishment from the rich sources which surround them, and this process may be artificially imitated, and the same results attained, by mulching. if properly done. It does not suffice to pile a few inches of straw or manure around each tree for a short distance from the trunk. If the tree stands singly, at a distance from others, the mulching should extend on every side beyond the spread of its branches; and in the case of an orchard, or young wood, the surface of the whole area it occupies should be covered with leaves, straw, shavings, chip dirt, tan-bark, or whatever material is most available, to a depth of several inches. I first learned the value of the process when a young man, on a coffee plantation in Cuba, where a portion of the hands were constantly employed in collecting refuse vegetable matter of all kinds, and spreading over the whole ground between the rows of the coffee bushes, to such depth as served to keep the surface cool and of even temperature, and also to prevent the growth of grass and weeds and thus supersede the necessity of ploughing between the rows.

Afterwards, when engaged in fruit culture in New Jersey, I practiced it in my vineyard and orchards with most satisfactory results, of which an account was published more than thirty years ago, in the *Horticulturist*, then edited by A. J. Downing.[*]

The trees and vines responded at once to my efforts in their behalf by such increased luxuriance of growth that it was easy to distinguish the portions that had been mulched as far as they could be seen, and, on digging into the surface-soil under the mulching at any point, I found it filled with fibrous roots precisely as is the case in the leaf mould in the woods. No fruit-grower who has once tried this experiment will ever after forego the advantages it offers, and I have spoken of it thus at length from the obviously vital importance of its bearing on forest culture. A moment's reflection will show that in the opening and thinning of native wood which had grown thickly together, a heavy mulching of such portions of the ground as may unavoidably become exposed may be of most essential service in preserving the health and vigor of the trees that are to be retained.

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[*] *Horticulturist*, Vol. p. 113.

It is difficult to lay down specific rules by which a novice could be guided in the work of opening and thinning out the wood of a native forest, except by fully impressing him with the importance of preserving, so far as is possible, the conditions which nature shows to be the most favorable to vigorous growth, and proceeding very cautiously when it becomes necessary to change the relative proportions of the influences which affect the vitality of the trees. The age and condition of the wood at the time the work is begun, are, of course, important elements for consideration. If the growth is not more than ten or fifteen years, and the trees have not sprung up so thickly as already to have become a mere thicket of hoop-poles, but have preserved a reasonable degree of symmetry, its management can be much more easily controlled than if it has attained a more mature age, and especially if the object is to create an ornamental grove composed of fine specimens of individual trees, a process by which the value of desirable residence sites in the vicinity of cities or large towns might often be very greatly increased.

Whether this be the object, or the development of timber, the first thing to be done is to select and place a distinguishing mark upon every tree which is ultimately to be retained. Then remove at first from its immediate vicinity only those which are actually crowding it, or impeding its growth by shading or interfering with its foliage. Those which simply shade the trunk or the ground around it are serving a useful purpose, and should not be disturbed. Indeed, if it is found that the necessary removals involve much increased exposure of the surface soil around the tree, it should at once be covered with the mulching of sufficient depth to prevent the possibility of its becoming heated and dry. All other sources of danger to the health of the trees are insignificant in comparison with that of the rude check they are liable to receive from sudden exposure of the trunks and surface roots to the influence of the sun and wind, from which they have heretofore been protected, and to which they can only become accustomed by a gradual change.

The next year it will be found that the tree has gladly availed itself of the opportunity for expansion, and has spread its limbs to fill the vacant space around it, so that more trees must now be removed, while the increased mass of foliage it has developed renders it less liable to suffer injury from their loss.

The removal of the undergrowth of shrubbery should be very cautiously conducted, and in no case should it be removed from the outskirts of the wood, which should everywhere be left with as dense a growth as possible, to prevent the entrance of the winds.

The sirocco-like wind from the S. W., which often blows with great violence for days together, especially in the spring and early summer, when the trees are full of sap, and the young shoots and leaves are tender and sensitive, is the one from which most danger is to be apprehended. The merely mechanical injury it inflicts upon the spray and foliage is often serious, but its worst effects are due to its absorption of moisture and vitality.

All experienced nursery men and fruit-growers have learned to dread its exhausting influences, especially upon grape vines and other broad leaved plants, and they too are aware of the fact, which comparatively few ordinary observers seem to have noticed, that its effect in giving a general trend of the spray and branches of trees in exposed situations towards the N. E., is so marked, that no one who has learned to observe it need ever be long at a loss to know the points of the compass in any parts of the country.

The fact, however, that we have it in our power to guard against the evil effects of this wind by artificial means, is not so generally known as it should be, and it was only after many years observation and experience that I came to a full realization of certain facts in connection with its action, which have a most important bearing upon the question of forest culture.

I became aware, many years since, that many shrubs, trees and plants would grow and thrive at Newport, R. I., and at Yarmouth, Nova Scotia, which in the interior were only found much farther south, and would certainly perish if removed to the latitude of those towns. The reason assigned in both cases was the warming influence of the neighboring gulf stream, which seemed a plausible explanation in which my faith remained unshaken for years, until I went to Chicago, where I found it was impossible to grow many of the finer fruits, and some of the forest trees which elsewhere are found in much higher latitudes. Neither peaches nor grapes can be grown at Chicago, or at any other point on the western side of the lake, without artificial protection, and the native growth of wood is very meagre, and many varieties which elsewhere are found much farther north, as the beech and the hemlock, cannot be grown; yet the eastern shore of the lake, only sixty miles distant, has no superior in the whole country as a fruit growing region. Peaches, grapes, strawberries, etc., grow most luxuriantly anywhere on that shore up to the northern extremity of the lake. three hundred miles north of Chicago, and every variety of forest tree indigenous to the country is found in the best condition of vigorous health.

There is no gulf stream to account for this difference, but the relative position towards the lake of the whole extent of its fruitful shore is the same as that of Newport and Nova Scotia towards the ocean. In both cases the S. W. wind reaches the shore after passing for a long distance over water, and instead of burning and exhausting vegetation with a breath of fire, it comes laden with the moisture it has gathered up in its passage, and brings health and strength upon its wings, instead of disease and death. Further reflection served to convince me that the rule was susceptible of much wider application, and serves to explain the different vegetation of the eastern and western shores of great continents in the same parallels of latitude. Central Spain and Southern Italy, the lands of the orange and grape, are in the same latitude as Boston, and going west on the same parallel to California, we again find ourselves surrounded with fruits and plants which in Boston can only be grown under glass. Continuing our western flight across the Pacific, we find the flora of Eastern Asia to bear, in many respects, a striking resemblance to that of Eastern America.

These facts have certainly a very important bearing upon the question of forest culture. They prove that the S. W. wind of spring and early summer is perhaps the worst enemy we have to guard against, and also that its deleterious influences are neutralized when it passes over a large body of water. It is comparatively rare, however, that a situation can be secured affording that advantage, and the question naturally arises, are there no other means of protection? I am happy to have it in my power again to summon nature as a witness that such means are within our reach.

I have said that the beech would not grow near Chicago, a fact which I was very reluctant to admit on first going there, and was only fully convinced of its truth by witnessing repeated failures, and the evidence of reliable nurserymen who had tried in vain to preserve it. Yet after I had long been satisfied that it was idle to attempt its culture, I was one day amazed, while surveying in the woods a few miles from the city, at coming upon a little group of beech trees comprising some twenty or thirty in all, of mature size and in full health and vigor. On examining the situation, to discover, if possible, an explanation of the phenomenon, I observed first that they stood in the bottom of a ravine so deep that their tops were scarcely even with its banks, while the wood which surrounded them extended more than a mile to the S. W., so that they were completely sheltered from the effects of the wind from that quarter. I have never been able to find or to hear of another beech tree anywhere in that region, and can only account for their presence by supposing the seed to have been brought from a distance by birds, probably crows, jays or wild pigeons, and dropped accidentally on a spot, which proved to be a "coigne of vantage," where they were safe from the enemy. The evidence thus afforded of the value of a screen on the S. W. side, should not be lost upon those who are selecting sites for orchards, or vineyards, and shows the importance, when thinning a wood, of leaving whatever shubbery or foliage there may be on that side to arrest the progress of the wind.

The work of pruning the trees which are to be preserved for timber involves a careful consideration of the principles I have set forth, apart from the judgment required for the skillful performance of the mere manual labor. The object in view being the development of the bole, it is important to remove any limbs which threaten to become its rivals in size, if any such have become established before the work of improvement began. But after the trunk has attained the desired height, it is on all accounts desirable to develop the largest possible mass of foliage, because the making of wood can only be effected by the elaboration of the sap, which is the work of the leaves.

If one is rearing a new forest, in which the trees have been under his control from the time of planting, it must be the result of his own ignorance or negligence if he has failed to secure such forms as he desired, since it is easy to direct the growth of young trees, and prevent them from running into extravagances which will unfit them for service as timber. And not unfrequently we may find a young wood of indigenous growth, which may be taken in hand and wrought into such shape that its future progress can be easily directed. But, for the most part, in woods that have been suffered to run wild till they have approached maturity, a good deal of skillful pruning will be required to bring the individual trees that are to be preserved into such form as will give them most value. Nothing but practice and careful observation can confer this power. The little treatise of DesCars on the pruning of forest and ornamental trees, translated by Mr. C. S. Sargent, of the *Arnold Arboretum*, and published by A. Williams & Co., of Boston, (price 75 cents,) contains full and explicit illustrated directions for all the manual work of pruning, and is invaluable as a guide to the novice, and a work of reference to experienced foresters. But mere manual skill in the performance of the work will be of little avail without the application of a thorough knowledge of the principles of tree growth, and a strict compliance with the requirements of their nature.

If our agriculturists will but apply to the management of their forests the same intelligence with which they direct the culture of other farm crops, they will find an equally ready response to their efforts. The farmer who should leave his field of corn or potatoes to shift for itself, or suffer his cattle and hogs to ramble through it at will, would be justly sneered at by his neighbors and punished by the loss of his crop—and trees have no more capacity for self-management than corn or other vegetables, and are quite as ready to profit by judicious culture, and to yield returns corresponding to the care bestowed upon them. They are not liable to be utterly destroyed, as corn is, by the incursions of live stock, but they do suffer serious injury from the trampling and rooting up of the ground. I have seen beautiful groves of oaks in Iowa full of dead and dying trees, and, on asking the cause, have been told that the native woods "can't stand civilization," but always die out when cattle begin to run in them; and I am told that, in Kentucky and elsewhere in the South, the young growth is found to contain only the inferior varieties of oaks, as the swine running in the woods seek and greedily eat the acorns of the white oak, on account of their superior sweetness. Has any one ever estimated the cost of raising hogs on such food?

I have endeavored, in the preceding pages, to confine myself to the special features of forest growth which need to be regarded in the effort to develop and improve a native wood, wherever it may be. The planting and culture of an artificial forest is quite another affair, and I have made no allusion to it because my special object has been, if possible, to urge the fact. and arouse attention to it, that we still have vast resources of latent wealth on every side, susceptible of development by proper management, which we are everywhere suffering to run to waste. The work of planting and rearing artificial forests can not indeed be urged too strongly, and there is no danger of its being overdone. But the conviction of its necessity can be more readily and forcibly impressed upon the popular mind by an illustration of the possibilities of forest culture, when applied to our native woods, than by any other means. The need of further progress by artificial planting will speedily become obvious, and will follow in natural course.

It has been asserted, and with truth, that it is idle for us to establish schools of forestry, because there is no demand for foresters, and consequently no stimulus to the acquirement of a knowledge of the theory and practice of the art. It will be time enough to establish such schools, it is said, when we have evidence that there are people who desire to avail themselves of the advantages they offer, and that will not be till there is a demand for the services of those who have done so. This is true, so far as it goes, but the next consideration is, how to create the demand. There was no demand a few years ago for telegraph operators, and when I was a boy there was no demand for railroad employes, for there were no railroads. How was the demand created? By showing the importance of the results. Think of the time and labor expended by Morse and his associates before they could get permission to demonstrate the value of the electric telegraph by a line from Washington to Baltimore. No general interest was felt in the scheme till its advantages were thus made manifest, because there was no *realizing conviction* of its truth. And to-day we are in a similar position in reference to the question of forestry. The impending danger of the diminishing supply of timber is acknowledged by all who are familiar with the subject, but there is no realizing sense of it in the popular mind, and there is a want of confidence in the practicability of any of the proposed measures of relief. The first and most important thing to do, therefore, is to stimulate popular interest by showing what *can* be done. To create a popular demand of any kind, it is essential first to demonstrate the value of its object. The men who are familiar with forest culture, know, as well as Morse knew the capability of the telegraph, that the wealth of the nation may be enormously increased by the proper development of the native woods already standing, but they can point to no evidence of the truth of their assertion, and the fact that it has not been done is regarded as proof of its impossibility. There is no such thing in the country as an illustrative example of what may be accomplished by timber culture, and very few of our citizens who visit Europe can appreciate the works which have there been achieved. They go abroad to study works of art, with the idea that we have nothing to learn in regard to natural productions, and the comparatively small number who grasp the conception of the grand possibilities of development which our forests offer to the exercise of such artificial culture as may there be seen, can do no more on their return than express their convictions and urge the importance of acting upon them. This they have done for many years past, but they have not succeeded in arousing such a popular conviction of the necessity as should enforce the action of their representatives to the point of making needful provision. The enormous and costly scale on which the work of planting new forests must be undertaken, in order to be effective, seems to throw a damper upon every effort to bring it to pass.

If every owner of a wood lot could be convinced that its value might be enormously increased by a process which, so far from demanding an outlay, would add to his annual income, it would not be long before farmers would consider it as derogatory to their reputation to leave the forests in the wild condition they now are, as they would to have a field of corn presenting a similar appearance of slovenliness. To produce such conviction the truth must be demonstrated in actual practice, and the cost of such demonstration will be but a trifling price to pay for the returns it will bring. Let any State or city select a tract of woodland at some easily accessible point, and put it under a proper course of management, as an experimental forest, and it would very soon excite an interest which could not fail to increase. A portion of it should be suffered to remain in its original, unimproved condition. Another part should be improved as "open park," for the best development of individual trees in their fullest natural capacity of dignity and grace, and a third portion should be devoted to the production of timber by the process of thinning, pruning and proper culture. The progress of development could then be seen and watched from year to year in all its stages, and the demonstration thus afforded would touch the interest of every owner of a wood lot. The process would soon begin to be imitated, a conviction of the value and importance of a knowledge of forestry would become established in the popular mind, and the demand for the services of those who had acquired it would lead to a demand for the means of acquirement, and thus the schools of forestry would be called into existence by the natural course of events.

The inauguration of such an experimental or illustrative forest as a means of exciting public interest is surely an object that is well worthy the consideration of legislative and municipal bodies, or of corporations whose interests are connected with this form of national wealth. The cost would be insignificant in comparison with that of planting and maintaining new forests, and the spur of personal interest would incite such general action as would add incalculably to the wealth of every State without further outlay than the cost of demonstration.

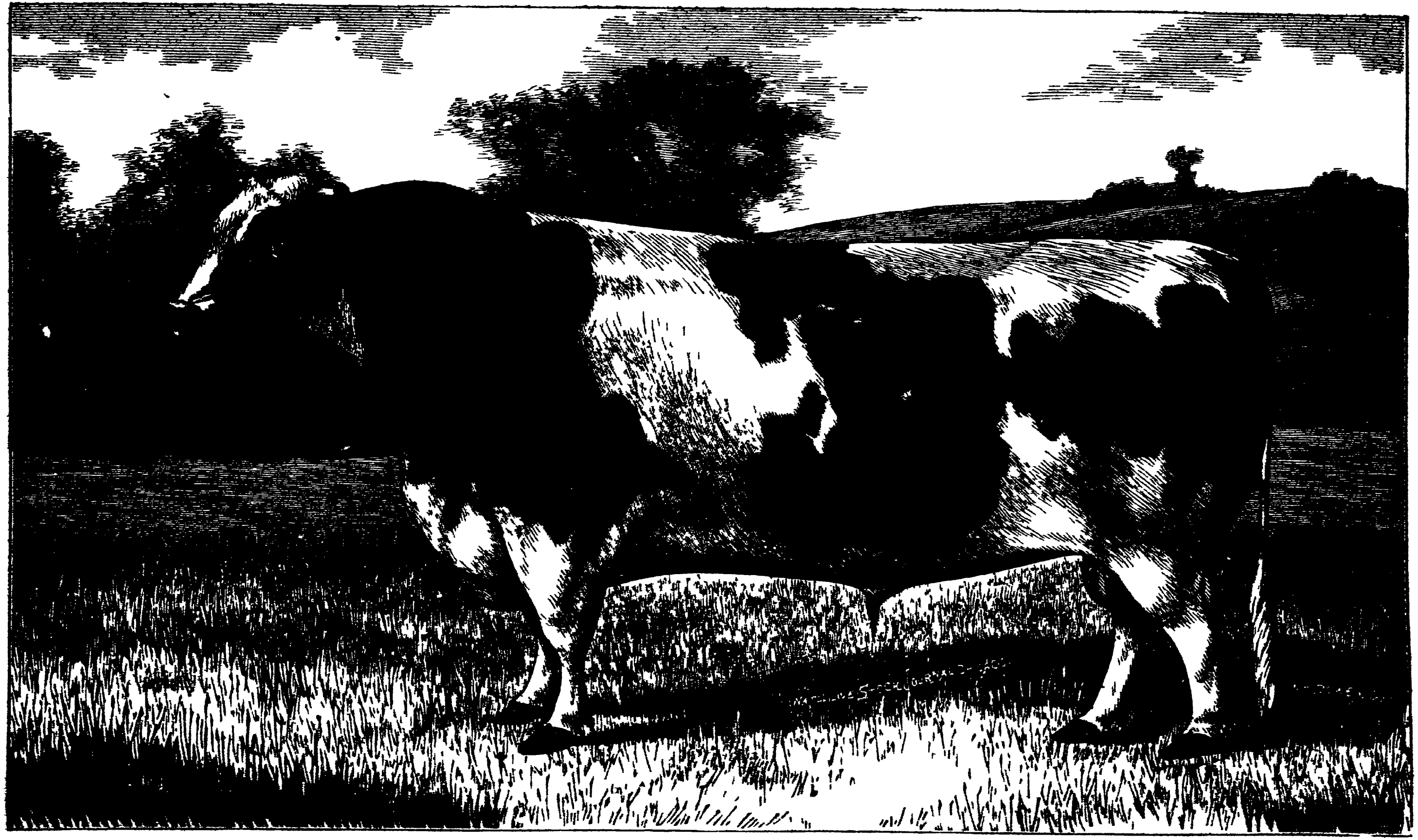
It is of course desirable that the experimental forest should be as conspicuous and easily accessible to the public as possible, for which reason the vicinity of a city would seem the most appropriate point. And municipal bodies would be justified in making a liberal appropriation for the promotion of such an object, since it would certainly constitute, for great numbers of people, one of the principal attractions of the city. The beneficial results which would follow, however, would add so largely to the substantial wealth and power of the State that its main support should be derived from legislative rather than municipal action.

It is not, however, my province to discuss the means of effecting the work, beyond this general suggestion.

I have aimed only to convey a conception of the rich resources which nature has placed at our disposal, if we choose to avail ourselves of her offer.

I have made no statement in regard to forest growth which will not be recognized as true by all who are familiar with the subject, and all such persons will endorse my statement that, *practically*, the rules which govern the process are universally ignored.

I have pointed out what I conceive to be the readiest means of awakening public attention and creating such general interest as will insure reform, and I leave to other hands the task of arranging the laws which must govern its execution.



Holstein Bull, Movie 26, exhibited by Unadilla Valley Stock Breeders' Ass'n., West Edmeston, N. Y. Awarded Sweepstakes Premium, State Fair, 1881.—p 409

PROCEEDINGS

OF THE

ILLINOIS STATE DAIRYMEN'S ASSOCIATION.

DUNDEE, DEC. 14, 15, 16, 1881.

OFFICERS FOR 1882

President,

Dr. JOSEPH TEFFT, - - - Elgin.

Secretary,

R. P. McGLINCY, - - - - Elgin.

Treasurer,

R. M. PATRICK, - - - - Marengo.

Vice-Presidents,

C. C. Buell, Rock Falls,
S. K. Bartholomew, Marengo,
Israel Boies, Genoa,
I. H. Wanzer, Elgin,
S. W. Kingsley, Barrington.
C. H. Larkin, Elgin.
H. C. Edwards, Dundee.
L. B. Parsons, Flora,
H. W. Meade, Hebron.

The ninth and next annual meeting will be held at Sterling, Illinois, December 13, 14 and 15, 1882.

LIST OF MEMBERS.

Adams, D. C.	Dundee,	Illinois
Adams, Guy	Elgin,	"
Barclay, D. F.	"	"
Bartholomew, S. K	Marengo,	"
Baker, B. P. & C E.	Chicago,	"
Beckley, L	Nunda,	"
Broomell, J. H.	North Aurora	"
Bosworth, I. C.	Elgin,	"
Buell, C. C	Rock Falls,	"
Boyd, John	199 Lake street, Chicago,	"
Boies, Israel	Genoa,	"
Baker, T. H.	Davis Junction,	"
Batt, Fred J.	Dundee,	"
Borden, J. M	"	"
Butler, Chas.	Elgin,	"
Cox, Benj	"	"
Cohoon, O. S	Belvidere,	"
Church, M K	Barrington,	"
Crichton, James	Dundee,	"
Cochrain, John	"	"
Duff, A	"	"
Demeen, John	"	"
Dempster, George	"	"
Edwards, H. C.	"	"
Evans, James	"	"
Farrell, T	Hampshire,	"
Fisher, Alfred	Dundee,	"
Farr, S. M.	Union,	"
Gage, J H	Holstein,	"
Giddings, George	Dundee,	"
Gilbert, J. B.	Sterling,	"
Gould, C. W.	Elgin,	"
Hawley, E. C	Dundee,	"
Hill, Wm. & Son	Prophetstown,	"
Hammond, D. S	Elgin,	"
Haeger, D. H	Dundee,	"
Hanley, A. H	McHenry,	"
Hodgess, James	Dundee,	"
Hull, Edgar	"	"
Jencks, D, S	"	"
Jackson, S. C.	"	"
Kilbourne, C. S	Elgin,	"
Ketchum, E. G	Dundee,	"
Kingsley, S. W	"	"
Lord, G. P	Elgin,	"
Larkin, C. H.	"	"
LaRue, Geo. W.	Port Byron,	"
Lawrence, O. F.	Elgin,	"
Libby, E. H	Farmers' Review, Chicago,	"
McGlincy, R. P	Elgin,	"

McNeil, Wm	Prophetstown.	Illinois.
Morse, Ed	Dundee,	"
McAllister, O. S	Hampshire,	"
Marshall, Geo	Dundee,	"
Norton, W. W	"	"
Nelson, E. H	Barrington,	"
Oatman, E. J	Dundee,	"
Pratt, Dr. W. A.	Elgin,	"
Perry, O	Dundee,	"
Patrick, R. M	Marengo,	"
Rohl, Fred	Dundee,	"
Sutfin, D. W	Dundee,	"
Steinberg, Fred	"	"
Sawyer, Geo. E	Carpentersville,	"
Sutfin, D. Sr	Dundee,	"
Smith, J. R	"	"
Schroder, Fred	"	"
Sandy, C. S	Carpentersville,	"
Tofft, Dr. J	Elgin,	"
Todd, Hugh	"	"
Thompson, A	Harmony,	"
Torrence, H. G.	Dundee,	"
Town, M. C	Elgin,	"
Thompson, M. H	"	"
Wardlow, John	Dundee,	"
Wilber, C. H.	Stillman Valley,	"
Wood, Chas E	Dundee,	"
Waterman, Wm. G	Barrington,	"
Waterman, Geo. W	"	"
Wanzer, I. H	Elgin,	"
Weld, O. B	"	"
Wardlow, S	Dundee,	"
Wilcox, S	Elgin,	"
Weed, E	Hampshire,	"
Went, Henry	Dundee,	"
Westerman, John	"	"
Wright, F. W	Elgin,	"
Wold, S. E	"	"

TRANSACTIONS.

The Association was called to order at 11 A. M. on Wednesday, December 14, 1881, by the President, Dr. Joseph Tefft, when, on motion, an adjournment was had until after dinner.

AFTERNOON.

The Association was called to order at 1:30, and the President introduced Hon. W. W. Norton, of Dundee, who delivered an address of welcome, so hearty and cordial that all felt at home at once. During his remarks he alluded to the growth and importance of the industry they represented, and the necessity of care in all their work.

J. H. Broomell, of North Aurora, responded, on behalf of the Association, and accepted the generous welcome so heartily offered.

The President then delivered his annual address:

ANNUAL ADDRESS OF THE PRESIDENT

Fellow Citizens Members of the Illinois Dairymen's Association, Ladies and Gentlemen

We meet here to-day in accordance with a preconceived idea for the purpose of spending a few hours in social communion and mental improvement. I trust you will bear with me if I spend a few moments in glancing at the early history of this old section of our State. I say old in contradistinction to a prevailing opinion which has been universally received that our lands have only recently been raised from the ocean bed.

Prof Agassiz informed us years ago that in his opinion the first-born land in the known world was on the American Continent.

This was contained in one unbroken stretch or line from Nova Scotia to the far West. If you please, draw two lines on your map, the upper one running from the mouth of the St. Lawrence westward nearly to St Paul on the Mississippi and the lower one from the neighborhood of St Johns, in Newfoundland, running southwesterly about to the point where the Wisconsin joins the Mississippi but jutting down to form an extensive peninsula comprising part of the States of Indiana and Illinois, and you include between them all of the United States which existed at the close of the Devonian period.

Now, if Prof Agassiz was correct in the foregoing (of which we have but little doubt), we are standing here to-day on a portion of the first land ever raised above the ocean wave. Be this as it may, we find plenty of evidence to show, beyond a doubt, that this vicinity has been the home of what was once a great nation,—a people who were versed in the arts which in part or whole are lost to us, or only known by the relics found here and there in the copper mines of Lake Superior, or in the mounds erected by them, and perhaps elsewhere. These people inhabited this country and undoubtedly tilled the soil hundreds of years, yea, many thousands of years ago.

It is believed by many that they had a hand in removing the timber from the lands, and thereby laying the foundation of our great prairies.

The presumption is, that this occurred long before the red man was allowed to roam over the prairie State. The Indians found here by the present generation have no traditional history of any race or people living here before them, other than those mentioned below.

They found the mounds here when they took possession of the country. After years of toil and endurance, for some cause to us unknown, these inhabitants abandoned their homes, or were exterminated. Subsequent to this, the soil remained a wild waste, or, in other words, all written accounts in regard to it are virtually unknown to history. In process of time, the territory was overrun by the Illinois tribe of Indians, who were a powerful nation, and committed many aggressions on the neighboring tribes, and finally waged war on them until endurance was no longer considered a virtue. About this time an alliance was formed by six of the adjacent nations or tribes, who combined to exterminate the troublesome Illinois. This being done, the country contiguous to the Fox river by conquest fell into the hands of the Pottawatomie Nation, who held it and cultivated only here and there a garden spot.

The large production of vegetable matter raised from year to year was burned, and went back to the soil in the form of ash and potash. In this situation the early settlers of this section found the soil forty or fifty years ago. It was at that time in a ripe condition to produce large crops of the various cereals

The wheat raised at that time was large and plump in kernel, and not unfrequently yielded on an average from twenty to forty bushels per acre, and sometimes even more than this amount was gathered.

Many of the early farmers conceived the idea that the soil was so rich in the elements of production that it never could be exhausted At least their actions would seem to indicate that this was the fact, as we found many who were always borrowing from mother earth without the least attempt to pay. The result of this practice was that within a quarter of a century wheat ceased to be a profitable crop to grow The berry had become small or shriveled, and the average production was only about ten bushels to the acre. Corn continued to produce a fair yield, but the price was so low that it hardly paid for gathering and marketing.

The same could be said of oats and other small grain. Then came the query, what should be done? About this time a company was organized in Chicago to build a railway from that city to Galena.

This railroad reached Elgin in the winter of 1849-50, and in the spring of the last named year a farmer from Orange county, New York, conceived the idea of sending milk to Chicago by rail. He immediately commenced the undertaking To him is the credit not only due for opening up the milk trade of this section, but also that of originating the first can ever made west of the great lakes for the transportation of milk. The same form and size of can is now in universal use in this State, as well as in many other western States. Little did he think, when he saw that one can of milk which was being trundled down to the depot in that old ox cart, what a river of milk was being tapped in this vicinity, and that it would so soon develop into such mammoth dimensions.

Think you of the thirty years ago, when some of our farmers at least were on the great cereal road to financial ruin. Many there were who were unable to squarely bring the year round, and not a few had encumbered their farms.

At this juncture the mother of the Bovine family of animals put in her appearance as a God-send. She with her fine lacteal flow has furnished the means to raise the mortgages, to erect fine buildings in the place of those old dilapidated ones of by-gone years. She has also produced an essential factor in the enrichment of the farm soil. We are of the opinion that the farms in the dairy districts of this State have largely increased in intrinsic value by the amount of animal deposits which they have received from time to time by the present mode of farming.

Cato, the Censor, who lived and flourished over two thousand years ago, being asked the best method of enriching a country, answered, by feeding cattle. We think we have good reason for believing there is not a dairyman in Northern Illinois, who has ever given this subject a thought, but will admit the soundness of Cato's opinion.

One need not go outside of the farm field to be fully satisfied that in the section of our State where dairies have been successfully operated for the last few years, the farm lands are in far better condition to produce a valuable crop of nearly or quite all of the cereal grains than they were twenty-five or thirty years ago.

Look at our corn, compare the soundness of the kernel with that raised on lands where the soil has not been quickened by animal deposits, and we are led to believe the most casual observer will be convinced of the benefit of stock for the farm, other than solely that of making milk.

If this be so, then in figuring up our profit or loss we should take into account the increased productive value of the soil.

It is a well settled fact that some kinds of crops exhaust the soil very much more than others. For the purpose of inviting your attention more thoroughly to this subject, we have appended a few comparisons. Suppose we take two acres of dried timothy hay, allowing 1½ tons per acre, we have three tons, or 6,000 pounds, the ash of which would be 317.16 pounds. We next take the same number of acres, tons and pounds of dried red clover, the ash of which would be 448.68 pounds.

Then two acres of berry of wheat, allowing 25 bushels to the acre, which would give us 3,000 pounds, the ash of which would be 35.30 pounds; then the straw of the same, estimated at 1½ tons per acre, would give us 6,000 pounds, the ash of which would be 211.08 pounds; and, lastly, we give a cow the products of two acres to sustain her for the year, and take from her 5,000 pounds of milk, the ash of which would be about 30.50 pounds. Now let us spend a few moments in looking at the component parts of the ash as above. that we may form some idea of what each of the five different kinds contain, and the amount of the same. In so doing you will please allow us to recapitulate a little.

	Dry timothy hay, 6,000 lbs; ash, 317 16 lbs.	Dry red clover hay, 6,000 lbs; ash, 448.68 lbs.	Wheat berry, 3,000 lbs; ash, 35.30 lbs......	Wheat straw, 6,000 lbs; ash, 211.08 lbs....
	Pounds.	Pounds.	Pounds.	Pounds.
Potash	52 86	59 85	6 74	1.20
Soda	23 64	31 74	7 20	1.74
Lime	44 04	166 80	2 88	14.40
Magnesia	5.40	19 98	2 70	1.92
Alumina—traces of iron	1 86	0 84	0 78	5 40
Silica	166 32	21 66	12.00	172 20
Sulphuric acid	21 18	26 82	1 50	2.22
Phosphoric acid	1 50	39 42	1 20	10.20
Chlorine	0 36	21 72	0 30	1.80
Totals	317 16	448 68	35 30 2	211 08 70 60
			70 60	281 68

5,000 pounds of milk gave 30 50 pounds of ash, composed of—

Phosphate of lime	15.49 pounds.
Magnesia	2 88 "
Per oxide iron	0 31 "
Chloride of potassium	8 27 "
Chloride of sodium	1 53 "
Free soda	2 02 "
Total ash	30 50 "

We see by the foregoing figures that a ton of timothy hay takes from the soil in solid matter 105.72 pounds. One ton of clover 149.56 lbs. One ton of the berry of wheat 23.53; the same of wheat-straw 70 36 One ton of wheat and straw together 93.89, and one ton of milk 12.20 lbs. This is exclusive of gases removed in each case.

If these figures are correct, can we doubt which kind of farming is best, so far as keeping up and in good condition the farm lands?

The question has often been asked if the West is not likely to over-do the dairy business. You will please let us look at this question, as it is one of much importance to the dairymen of Illinois. In the first place we will cast our eye back to the decade prior to 1850, when but little butter was made for sale in Northern Illinois, and when that little brought from eight to ten cents per pound on an average. This was at the time when it took only a dozen tubs to glut the great Chicago market.

It has been hinted that the butter made at the time mentioned above was of inferior quality and consequently had to be sold low. While some might have been, we are quite sure that all was not so.

A visit was made by us to Chicago at a time with a friend who had about a dozen tubs for sale, and who, after spending hours in trying to sell his butter, finally found a hotel keeper who offered him 12½ cts per pound, provided he would take his note due a few months hence, saying at the same time the butter was too good to be profitable for him to purchase, as his guests would eat twice as much of it as they would of eight cent butter. How with cheese? About this time we had a few hundred pounds of full cream cheese made on our farm for sale, for which we were offered all the way from five to seven cents per pound by Chicago buyers. We finally bartered it off for eight cents a pound. Last week we paid eighteen cents a pound for cheese in Elgin, not as good as that we sold thirty-five years ago for eight cents.

Creamery butter sold last week on the Elgin Board of Trade for 43 cts. a pound.

Does this show the dairy business as over done in this vicinity at the present time? We think not.

The increase of the population in the United States for the last decade has been 11,230,185. Now give 14 pounds of butter to each, the amount computed as used per capita in this country, and we would require an additional make of over 157,000,000 pounds for home consumption alone, over the make for home use in 1870.

The acquisitiveness of some, yea many, of our American people has induced not a few to commit various grave errors in the form of adulteration of the various kinds of food for human consumption, and amongst the many, perhaps none have suffered more than that of the dairy.

This has had, and is having an injurious effect on our exportation of dairy products. How long this thing will be allowed to exist no one knows.

Perhaps there is no country in the civilized world where adulteration is carried on to such perfection as in the United States.

A careful observer can but notice the result of this on the physical and mental condition of our people. Who is there, or where can we find a person, that has lived to see a score of years, who is perfectly sound in health and mind? Look at our asylums and see the fearful increase of mental disease there, and then quietly ask yourselves how much of this is the work of adulteration of our food.

The largest exportation of our own dairy products is to England. Mexico draws her supplies of this product almost solely through that source Although only divided from us by a comparatively small river, such have been our commercial relations with her that but very little, if any, of our goods have reached her market direct. The prospect now appears favorable for a railway connection with the City of Mexico in the near future, which may result largely to the benefit of the dairymen of this country. Some of the South American States import butter and cheese, not directly however from this country, but through our English cousins on the other side of the great Salt Pond.

By suitable exertions on our part could we not reach that trade direct and thereby benefit the dairymen of the United States?

In taking a careful survey of the dairy and its connections, we are constrained to repeat what we have often said before, that we firmly believe the factorymen commit an error in not stamping their packages with their names, place of business, and quality of their goods.

If this was universally done, the purchaser could step up and purchase his supplies with much confidence

It does not appear reasonable that the manufacturers would suffer by so doing if they put upon the market an honest article No man should follow for a moment a profession or calling where honest dealing will not give him ample support. He owes this to himself, to his fellow-men, and to the world at large

The Chair appointed the following committees:

On Nominations, S. W. Kingsley, A. Thompson, O. S. Cohoon.

On Finance—E. C. Hawley, E. J. Oatman, Chas. E. Wood, Mesdames H. C. Edwards, D. C. Adams, and George Giddings.

On Obituary—J. H. Broomell, C. H. Larkin, H. C. Edwards.

The following paper was then read by O. S. Cohoon, Esq., of Belvidere.

THE COW IS QUEEN, AND HER PRODUCTION IS KING

Ladies and Gentlemen

I do not expect to prove to you that the cow is queen and her production is king, entirely by statistics alone; neither in a commercial view of the matter alone; but by various methods, such as her moral power to the human family, her financial betterments to the human family and to the farm, and by the farm, where her production reaches to an immense value.

A very few years ago it was said that cotton was king, and it seemed that possibly it might have had that kind of a tendency, because it undertook to manage our government, and used immoral efforts to legislate the freedom and the rights of *liberty* from a large mass of human beings. And now, like all other things, time and death level the would-be king of tyrrany. This king taught no morals, but the cow, the queen, and her productions, the king, we propose to show you, have given us moral lessons all the way up from time immemorial.

Let me stop a moment and take you back in your imagination to some remote time in history, or better, only back in the memory of many a father and mother of this association, and draw a little true picture that has transpired in their time, to prove the great moral worth of the cow. Many of you remember, a long time ago, when Obadiah was one and twenty years old and came and took Susan Jane (for some unaccountable reason) for better or for worse, and emigrated way out west into the State of New York, to make a home of their own.

With hardly clothing enough to make moderate weather comfortable, with a small lot of household goods, which mother had divided, and possibly an old horse that father could spare, an old ax, and a few little traps that would make life possible when landed in the deep wild forests of Western New York, or on the far distant prairie in its primitive days,—at this juncture Susan Jane and Obediah, with strong hands, take hold of life with energy and zeal, and build a little log castle in the forest, and a glass one in their minds for the future; and immediately, if not sooner, a little offspring, a little king or queen upon the throne, puts in its appearance, with more demands than Susan Jane and Obediah are prepared to pay.

And as a rule there is more to follow, as time rolls briefly along, and soon Obadiah writes home to father, or Susan Jane to mother, and says something like this: That they had a little piece of land cleared, a little log house, and a little log barn and enough to feed the old gray horse, and a little to spare. And as Johnny was getting to be a big, nice, fat baby, if father could just help them to get a nice cow of John Jones that lived down in the settlement, they would be perfectly happy in their new home. Jones would sell them the cow for thirteen dollars and a half. A very nice cow with very long horns and quite tall, with short, bushy tail, and Jones says we can have the calf too. And now if father could let us have ten dollars a year or two, so that they could buy her, it would be so nice for baby (to have some nice warm milk) Jones will take five cord of wood for the other three dollars and a half and Obadiah says he can get that out soon.

Now, picture to yourselves what father and mother would say on receipt of this letter. Obadiah had been a good boy and had helped clear up the farm, and Susan Jane had been good to wash dishes and tend the baby and mother says she will sell this jar of butter and box of eggs when she goes down to Bangor, and father would have a little left out of the sale of that pig, after paying his taxes, and Obadiah would buy his first cow.

Now, ladies and gentlemen picture to yourself this little story of getting the first cow, in a thousand different ways, by the tens of thousands of men and women, and think of the many millions of moral worth that there has been in it There is many a man and woman in this house I have no doubt who has seen a thousand times better picture, in their experience of life, than I have drawn And Obadiah's cow and calf have grown and increased from a thirteen dollar cow and eight cent butter to a fifty dollar cow and forty cent butter and I believe lives way out West near Dundee Ill, and belongs to a Board of Trade at a place they call Elgin And many of these Obediahs have their hundreds of cows on the thousand hills round about

And then came a period that corn was called king, and a very fair king it made, too. With its millions of value it did not teach those lessons of thrift economy and increase that the cow and her progeny bring to the mass of the human family A very short time ago Frank Leslie's illustrated paper undertook to prove that grass was king, and when you figure the many uses and ways that it can be used and in a financial view, there are millions in it, and a very formidable king it makes

Those statistics are a very valuable document for study, but would be too long to detail here on this occasion as I wish to detail to you a very few statistics on the value of the cow and her productions in a commercial way

The Hon George B Loring, United States Commissioner of Agriculture stated at the National Butter Cheese and Egg Convention at Cedar Rapids, that there were 12,412,137 milch cows in the United States in the year 1880 and that there had been an increase of 3 476,805 milch cows in the last ten years and an increase of 12 057,183 cattle of all kinds in the same period And the increase of milch cows in the ten Northwestern States has been 63 per cent

Now ladies and gentlemen, think of it! The glorious old cow, the pet of the family, has increased in the Northwest in numbers to the amount of 63 per cent in ten years, and the amount of her butter has increased 63 per cent or more and the price of her butter and cheese has increased 50 per cent in the Northwest And the increase of all kind of stock, the production of the cow is 100 per cent, making a total of 276 per cent, and I may add, there is millions more in it The grand old cow has lifted more mortgages and paid for more farms from Maine to Oregon than any one other production ever produced Ladies and gentlemen I could enumerate innumerable amounts wherein the cow is the producer and the king of production

She is the mother of all our beef, the improver of infant pigs and furnishes milk for many infants of the genus homo And it requires her production to make oleomargarine. I refrain from enumerating statistics of butter cheese, condensed milk, sugar of milk, and a hundred culinary purposes which milk makes the cream of living Now, I do want to say that the cow has turned the tide of our agricultural prosperity here in Northern Illinois and many other places, from a downward course in raising grain, to an upward and prosperous one in raising stock grass and hay It has been said long ago, that the man who made two blades of grass grow in the place of one was a benefactor to his race. Now any man that will raise the cow intelligently, and continue therein any reasonable length of time, will be that benefactor

There are millions more in the cow, of which men of larger caliber than myself will tell you before you leave this convention when they give you statistics about the Shorthorns, Herefords Ayreshire, Jerseys, Holstiens, Devons, and possibly the coming cow may come from Iceland or Alaska

Since writing the above, report says that Obadiah's son John or one of his younger sons, was one of the editors of the Chicago Tribune, and had forgotten about the pet cow of the family and wrote the following editorial a few weeks ago, which, to me, looks like a man up a tree

"*The Butter Question.*

"The speculators in butter allege the drouth of the late summer and early fall as a reason for keeping up the excessive price of their products But this is a mere pretext The drouth was followed by a long season of abundant rains The pastures were again covered with a growth of the richest verdure and outdoor feeding has already continued on the average five weeks longer than in the season of 1880. The second crop of hay was, in many localities better than the first, which was a heavy one and the price is now tumbling under the influence of the late supplies The fact is that the price of butter has been run up and kept up in sympathy with the price of grain, though there is no reason for it based on short supplies The butter makers and dealers have been bitten with the mania for speculation, just as the wheat-growers and dealers have, and they are likely to have as bitter an experience before they get through with their deal Because corn is a little high and scarce is no reason why butter should be so dear, when the pastures this fall have been so unusually good. The thing has been overdone. The dairymen would better think it over

“The subject has a very direct bearing on the movement for the prohibition by state and national enactments of the making of counterfeit and adulterated butters. With what grace can the dairymen ask government to stop the manufacture of butterine and oleomargarine—which, though cheap, are alleged to be perfectly wholesome—when the price of pure butter has been advanced beyond all sense or reason? At 40 cents, butter is beyond the reach of the vast majority of the people living in cities and towns, who can afford to pay no such price. All the laboring population, mechanics, and the salaried class generally, find the present price much too high—more than their incomes warrant paying. They must either stop consumption or use cheaper grades, most of which are mixed or compounded. In this fact will be found the secret of the vast development of the manufacture of spurious butters in the last two years. If genuine butter were, say 25 cents a pound, the people would very readily detect the spurious, and many wouldn't touch it at any price who are now compelled by stern necessity, when they buy their butter, to

Be to its faults a little blind—
Be to its virtues very kind.”

The same editor, or his associate, a short time ago, found the price of corn too high, and created quite a breeze about the same. He also found the price of his beefsteak too high, soon after, and then ordered his reporter out to find the cause. The reporter made advances in that direction, and found the cause to be that it *was so good*. And we would say that the reason for the present price of butter is that it is so good.

J. H. Broomell, of North Aurora, then read the following paper:

SILOS AND ENSILAGE.

Some thirty years ago a Frenchman by the name of M. Auguste Goffart, a member of the Central Agricultural Society of France, and a man of wonderful perseverance, commenced a series of careful experiments looking toward the preservation of green food for stock. His idea was that any food plant taken at the time of its blossoming, contained its maximum amount of the nutritive elements, and that the preservation of such plants by desiccation or drying, resulted in the loss of a good percentage of the food principle of the plant. To be convinced of this is only necessary “to cross a meadow at the time when the new-mown grass is undergoing desiccation, in order to recognize that it is losing an enormous quantity of its substance, that exhales in the air in agreeable odors, but which, if they remained in the plant, would serve as a condiment, facilitating digestion and assimilation.” With many failures, and at times partial success, he at last, in 1873, came out triumphant in the discovery of a method which promises to overturn the whole system of stock-feeding, and which has made his name famous among leading agricultural men in this country and in Europe. J. B. Brown's translation of M. Goffart's writings has become a text-book among ensilage stock feeders.

Goffart built four silos on his farm at Burtin, France, in 1852, over twenty-nine years ago. They were excavations hollowed in the ground, walled, and plastered with cement, and water tight. He also had his fodder cutters imported from England. He is using them still.

He used these silos during all of his experiments and failures. The fault was not with the silos, but with the method of preparing and storing the ensilage. During twenty years he succeeded only in preserving the fodder for a few weeks, having to feed it out in great haste to head off putrid fermentation. This was quite unsatisfactory, and often left him short of feed. He cut his corn six inches long, often mixing with it a quarter or a third of its weight of short straw. After tramping it down he placed upon it a layer of short straw, and finally a cover of loam well beaten down to make it air tight. During the days following he stopped all fissures which appeared on the surface.

Upon opening the silos he invariably found a cavity between the settled ensilage and the arching loam. Here was an air space which played the mischief with all of his plans. Later he abandoned the loam entirely and substituted a plank covering which descended with the maize as it settled down. This simple change produced a perceptible improvement, but it was still far from perfection. Still later, he reduced the mixture of straw, cut his maize three-tenths of an inch long, and weighted his plank covering with 100 pounds to the square foot, and found that his ensilage kept an indefinite length of time.

Here was success after twenty years of failure. While cutting his corn shorter and reducing the straw to a tenth of the weight of the corn was important changes, he regards the weighting of the covering planks as the very essence of the successful issue. Since 1873, Goffart has followed the regular filling of his silos at Burtin, and has been a great educator of his countrymen in the new process throughout France, and to this may be attributed much of the recent increase of exports of dairy products from that country.

The credit of first introducing the system of ensilaging into the United States must be given to Francis Morris, of Oakland Manor, Howard county, Maryland. His attention was first called to this system by a newspaper which reached him from France in the early part of 1876, our Centennial year. He commenced by raising five acres of drilled and cultivated corn that same year. It was in tassel in the first days of October, at which time he cut it into one inch lengths and packed it into three brick silos inside of his barn. These silos were built after the corn was planted, and were each 25 feet long, 4 feet wide and 10 feet deep. The fodder was packed in by tramping, then covered with boards which was weighted with stones. After being thoroughly pressed down, he removed the stones and covered the boards with straw, and placed a covering of well packed clay upon the straw with the view of making an air tight covering. This notion of covering with clay must have been imported from France before it had been well established there that clay was superfluous.

The first silo was opened on Christmas day of 1876; all of the cows fed from it. He used it as feed for cows, horses, sheep, hogs and mules, and they prefer it to the best of hay. Mr. Morris says his crop for 1877 was not so abundant to the acre as that of the preceding year, owing to neglect and dry weather, but the quality was equally as good, and that he fed with it over a thousand head of stock for two months. For the year 1878 he doubled the crop and built and filled a very large silo out of doors, besides filling the three silos in the barn. Since 1878 Mr. Morris has increased his silo capacity to 1,000 tons, which shows conclusively that he is well satisfied with ensilage as feed for his stock. He speaks as follows "I have a very large herd of stock dependent on the corn fodder for their winter feed, and I feel confident that they will furnish me with all the provender I require. In a long experience in raising stock, I have found corn fodder preserved in silos the best feed for milking cows that I have ever used. It is equal, if not superior, to June grass, and its cultivation is so easy, its preservation so inexpensive, that to-day no one can estimate its advantage to the agriculturist."

Mr. Morris is still using it with success, and is, year by year, raising the productive value of his lands by the application of the large amount of manure made by this system; can now get 40 bushels of wheat to the acre from land that would formerly yield but ten bushels.

It is a matter of interest to note that while Francis Morris, as a disciple of Goffart, was developing the system of ensilaging corn on his farm in Maryland, C. W. Mills, of Pompton, Passaic county, New Jersey, was working out the same idea, without having heard of Morris or Goffart. Mr. Mills is a grain merchant of New York, of high standing, familiar with all kinds of wheat and corn, and had been struck with the luxuriant character of some species of the southern corn. He determined to experiment with it on his farm at Pompton. Having selected his seed, he planted it among his ordinary New Jersey corn, alternating the rows of the kinds with the object of improving his northern variety by hybridizing it with the southern. When September came his northern corn was ripe, ears all formed, but the southern corn was still unripe. If the frost came it would be wasted, and what to do to save it for feed was the question to be solved, and which Mr Mills at once set about trying to do He remembered the old method of keeping roots in mounds of earth, practiced from time immemorial. Pits were dug in dry, gravelly soil; the tall corn was cut down and packed on board foundations in these pits. When filled, a board roof was placed upon the corn, and the whole covered with earth.

When the time came to try this food on cattle, it was found to be in fair order. The stock ate of it greedily, but still the plan was but partially successful, owing to portions of it being mouldy, and as the pits were disturbed, the process of decay went on rapidly. This experiment was the key which seemed to unlock the great secret of preserving food in the silo.

This was in the autumn of 1875. Nothing was done with it in 1876, but Mr. Mills set about thinking it all over, and devised his present system of preservation by the exclusion of the air by pressure only. In 1877 he made a complete success of it after the exact plan of Goffart, omitting the mixture of cut straw which the latter used as late as 1876.

It seems strange that two men so far apart should both hit upon the same thing at about the same date, and yet we have the statement of Mr. Mills that he had not heard of Goffart or Morris when he built his first two silos in 1877. These were each 40 feet long, 13 feet wide and 20 feet deep, and located under the floor of his barn, and constructed of masonry and plastered with cement, with a plank casing on the top of the walls, and with proper pressure these silos will hold 600 tons of ensilaged corn. A year ago this winter he had them filled from the produce of 13 acres of ground. The complete cost of these silos was $700, or $1.16 for each ton's capacity. The cost of seed, planting, tillage, harvesting and putting into the silos ready for feeding was something less than $500. The capital being $700, the interest at 6 per cent. would be $42, and allowing 20 per cent. for repairs of silo, which would be the very outside for all possible repairs, we have the cost of the ensilage to be $1.14 per ton Mr. Mills weighs his silos with the grain feed which he uses with the ensilage, a good idea where grain need to be used, which would be only necessary with the milking cows, the work horses and the fattening stock, no grain being required for the rude wintering of stock. On April 4th, 1881, Mr. Mills stated to Francis D. Moulton that he had carried through the winter then just passed, 120 horned cattle and 12 horses on the produce of thirteen acres, and with half of the ground feed that would have been necessary if feeding the best of hay instead of green corn fodder. With hay worth $20 to $25 per ton, as it was last winter, in the vicinity of New York, and with two tons of ensilage equivalent to one ton of good hay, as they all claim for it, I hardly dare mention, for fear of ridicule from the skeptics, what Mr. Mills saved last winter by feeding ensilage to his 132 head of stock But I will venture. 600 tons of ensilage, equal to 300 tons of hay, at $20 per ton, $6,000—600 tons of ensilage at $1.13 per ton, $678, a clear saving of $5,322 for the winter.

During the summer of 1880, Whitman and Burrell, of Little Falls, New York, erected a large stock barn, 92x36 feet, and three stories high. They built on the hill side of the barn, opening into it, two silos, each 27 feet long, 16 feet wide and 20 feet deep. These will hold 250 tons each of ensilage. These silos are built of strong masonry, and roofed in with the barn. From seven acres of corn planted on the first of June, and harvested in September, they filled one silo to the depth of 16 feet and the other to the depth of 11 feet, taking seven days to harvest the crop. They put on the plank covering, and weighted it with stones. On the 26th of October they opened one silo and found the contents preserved in good shape. They fed their cows upon it during all of last winter, and they were doing well in milk and looking well, when Mr. Oatman, who will follow me, visited them in March last. Their ration per cow was 65 lbs. of ensilage, 4 lbs. of middlings and ½ lb. of cotton seed meal per day.

As to the cost of their ensilage, Messrs. Whitman and Burrell speak as follows: "We had, when we commenced feeding, 212 tons of ensilage; the exact cost of harvesting it, filling the silos, and putting on the stones, etc., was $217, allowing full wages for our time.

This 200 tons is equal to 70 tons of hay, costing $3 per ton, or 10 tons to the acre. We believe that by putting all the manure back on to the seven acres we can raise 40 to 50 tons to the acre." With 15 acres of corn and 20 acres of pasture land, they propose to carry 50 cows through the year, their plan being to feed ensilage in winter and to supplement the pasture in summer by a light feed of ensilage morning and evening.

One of the most stirring advocates of the new system is Dr. John M. Bailey, of Bilerica, Mass., who built the first concrete silo in the United States, in the summer of 1879. He received his inspiration from reading J. B. Brown's translation of Goffart's story. He has contributed very much to the public confidence of the system by his energy in practicing it, and his activity in writing about it. He has two silos, capacity of 400 tons, which cost $500, or $1.25 per ton of capacity. He claims that under this system milk can be produced for one cent per quart, butter for ten cents per pound, beef for four cents per pound, and mutton for nothing when wool is worth thirty cents per pound—a statement strong enough to craze Illinois dairymen who are now getting 45 cents a pound for butter.

Dr. Wm. H. Farmer, of South Amenia, Dutchess county, New York, built one silo in 1880, capacity 250 tons, and has since been using ensilage for his winter feed. He carries a dairy of 86 cows, and is greatly pleased with his experiment.

James S. Chaffee, of the same town, built one silo in 1880, and I believe has since added another, his intention being to provide a variety of food, by using one silo for corn and the other for clover and Hungarian grass jointly. The clover could be put into the silo in time, and later, when the Hungarian was ready to harvest, the clover could be safely uncovered to receive it on top and again weighted.

Jacob Pugsley, of Standford, N. Y., built and filled a silo during the same summer. The quantity being limited, considering the number of his herd, he fed only a part of a ration of ensilage during the first winter. He says "If it proves to be a fact that 60 pounds per day is a full ration for a cow, ensilage will be considered the most important discovery mankind has ever made since Adam found Eve."

O. B. Potter, of Sing Sing, N. Y., has been practicing a system peculiarly his own since 1877. He has been using underground brick silos. These are arched over and are provided with man-holes, or necks, through which the cut fodder is thrown into the pit below. It is then tramped down and covered with earth or brewers' grain. As it is not compressed with a continuous pressure of 50 to 100 pounds to the square foot the air is not entirely expelled and the ensilage is always sour. Mr. Potter says, however, that his cattle do well upon it. The silos are connected with each other by narrow openings, making a succession of chambers and also a passage to the stables so that all the food and the labor of supplying it to the animals is underground and out of sight. He thinks well of his system, but is evidently behind the best light of the day on the new subject.

As the star of empire now lies in the west, it comes to us that the largest system of silos yet built in the United States can be found in the young State of Nebraska. They were built in 1880 at West Point, Cummings county, and have a united capacity of 2,000 tons. There are four of them, each 60 feet long, 16 feet wide and 20 feet deep. Dr. Eager, their owner, thinks ensilage is cheaper than prairie hay at no greater cost than the cutting and stacking.

So far as I am informed the Oatmans of Dundee, have the honor of building the first silo in the great State of Illinois. To them be the credit of leading in a system that will show according to my prediction hundreds of silos in this commonwealth in the next five years. What they think of it will be presented to you by one of the firm who is to follow me in this discussion.

The ensilage system of preserving food green for winter feeding, is no longer a matter of doubt. It has passed the line of experiment. It is well established among our foremost agriculturists. It only remains to satisfy dairymen and stock raisers, and stock feeders, that it is profitable, that there is money in its adoption. This will soon be done. A few practical illustrations of it in Illinois, will set the system to going all over the state. Some say that it is premature for the west, that we don't need it in a country where feed can be produced so cheaply. To be sure all of the states do not yet feel the pressure of worn out lands as they of the east, but there is coming a time when all will be forced to adopt it in self defence.

Before closing I wish to speak of ensilage as a substitute for soiling. I am satisfied that the pernicious effects of soiling or feeding unripe grasses, and other plants, is not well understood. The meat of animals which are fed on it is injurious to health and their milk the frequent cause of dysentery and death amongst children. The butter and cheese produced from animals fed upon unripe grasses are necessarily bitter and unwholesome. Disease is the immediate effect of it upon the animals. In the winter succeeding its use, the farmer finds upon his hands ten or a dozen cows sick with hollow horn, or some other disorder that he does not know how to account for. Ensilage furnishes ripe wholesome feed and is the cheapest system of soiling. It is much cheaper to harvest the crop all at one time and feed it out from the silos, than to cut and haul day by day from the field.

It has occurred to me that it will be practicable during the introductory period of the system for large farmers to make it a business to sell ensilage to their less favored neighbors, who could get their feed from day to day as needed, from those who have it to sell. The capital required to build the silos, and provide a fodder cutter, and power to run it, might be beyond the means of some who would want to use it. Such persons might be provided with their ensilage by the large silo-men at a small price, and still at a profit.

It can be sold at a tenth of a cent a pound and still double the cost of production. Suppose 60 pounds be a cow's ration for a day, the cost of provender for the cow would be 6 cents a day. In towns and cities there are many families that keep a single cow or two. The time will come when the man who fills his silos near the city, and peddles ensilage from stable to stable for these cows, will be as indispensable as the milk peddler now is to the *families* that do not keep a cow. Or, as a substitute for this, the man who owns only a house and lot of God's foot stool will have his silo in his back yard, and a man who has the ground to raise the corn, and the machinery to prepare it, will take contracts to fill family silos and insure its successful preservation.

The method of preserving ensilage is now so well understood that there need be no failures. The rules are few and simple, and yet a departure from one or more of them may bring disaster.

I will enumerate them:

1. The silo must be so nearly water tight, and so well drained that no water can get in from the surrounding soil. The walls must be strong and perpendicular.

2. The corn or other crops should be cut when in full blossom, and when in full sap. With corn, the time of silking out is right; with clover, when in full red blossom.

3. The crop should be cut short with a fodder cutter, length not exceeding a half inch, and should be harvested promptly.

4. It should be tramped into the silo while filling, and, when completed, planked over in sections, not exceeding four feet in width, with planks nearly touching the walls of the silo.

5. These planks should be weighted with not less than 50 pound to the square foot. These simple rules cover the whole ground. No straw is needed under the planks. If an accident should happen to cause delay during the filling, sprinkling water on the ensilage already in the silo will keep it safe while the machinery can be repaired. The work of filling can go on as well during a wet day as a dry day, so far as the success of the work is concerned.

Any new enterprise gives rise to a demand for new machinery especially adapted to its needs. This has been the case with the system of ensilage. A rapid, powerful and durable fodder cutter was indispensable. Such a one, called the Cycle Ensilage Cutter, has been brought out by the New York Plow Co., 55 Beekman St., New York. It does its work rapidly, and with less power than any one yet invented. It works with the draw cut, and will cut ten tons of corn fodder an hour, with six-horse power. The cost I am not able to give at this time. I notice that a smaller machine of the same kind is now manufactured by David Dawton, at Racine, Wisconsin, called the "Belle City Feed and Ensilage Cutter."

I have no doubt that Yankee ingenuity will soon devise a substitute for the troublesome and expensive plan thus far practiced of weighting the ensilage. I see no good reason why a system of screws might not be used, if carefully attended to, for the first fifteen days after the filling of the silos

E. J. Oatman, Esq., of Dundee, then read the following paper:

ENSILAGE.

Mr. President

This subject of ensilage, to which the writer has beed assigned for this occasion, is one filled with interest, not only to the writer, but to every man, be he dairyman, stock raiser or cotton grower. From one and all, this subject is demanding the closest investigation, for if the claims of its advocates can be substantiated, and the system proved practical for the masses, then we, as farmers, can no longer afford to while away our time on the present system of milk and stock productions. The possession of the mighty dollar being the stimulating power which causes us all to labor so incessantly, it behooves us, as a body, to enquire into our present system of attaining that point, and ascertain if we are *wisely* devoting the means within our reach to the accomplishment of the desired end. Realizing, as we did, that the net profit of our farm was not so good as we would wish, and not knowing *just how* to increase its returns, we were in a good frame of mind to receive the impression, which was given us by a gentleman from the office of one of the papers devoted to agriculture in Chicago, who, meeting us with the fabulous report of results being reached in some parts of the eastern States at that time, 1879, through the medium of ensilage, at once "*hit us hard in a weak place.*" This man used his best efforts to induce us to make our arrangements and go ahead and build a silo the coming spring. The story seemed too good to be true, and the idea of cutting up and packing away in a hole, green corn fodder and expecting to see it come out in first class feeding condition in dead of winter seemed to us (like some of our good friends the past season hereabouts) to be an impossibility; it would heat, ferment, rot, etc., etc. A great many objections arose in our minds, and we refused to comply with the gentleman's request, at least until we knew more about it. We at once began watching the papers, and eagerly devoured every item relating to this beginning to be interesting subject, and when we learned of the silo Messrs. Whitman & Burrell had constructed at Little Falls, N. Y., the writer at once determined to see that silo, and its "cow krout," as some are pleased to term this most excellent food. Accordingly, during the last days of February, 1880, the arrival of the investigating committee from Dundee, composed of the writer and his traveling bag, was duly announced. Not many hours thereafter the silo was reached, and the first move made was to jump down into the capacious mouth of the same, bringing up on a section of ensilage which was being taken out to be fed to the stock. Before leaving Messrs. Whitman & Burrell, the Dundee committee was fully satisfied that ensilage was a success, at least with those gentlemen. Their cheese, butter and milk, all produced from ensilage, with no other feed except a small amount of oil and corn meal, were carefully examined, and all were of the finest quality. The fact that there was nothing to fear in the way of producing poor goods from ensilage, was here proved to the entire satisfaction of the committee. Adjournment to Dundee thereupon took place at once, and very soon after report had been made it was determined to go on and build a silo as nearly first class as our means and the material at hand would permit Accordingly, on the 28th day of June 1881 after staking out our location 49x43 feet adjoining our barn at the north end we began excavating, using two teams with plow and scraper and after nearly three weeks' work we had the satisfaction of knowing we were ready to begin the building of the walls, concrete having been decided upon for the construction of the same the proportions to be one part water lime to seven parts coarse gravel the latter containing sand in sufficient quantities to cause the quick and firm cementing of the particles

To build the walls and hold the concrete in place while setting we proceeded as follows, wishing to make the silo 20 feet deep we placed 2x4 scantling 22 feet long at intervals of 4 feet all along the outside of the walls and across the ends staying them securely in a perpendicular position by braces from each Wishing to have the outside walls 18 inches thick, we placed a second row of scantling all around inside the others 22 inches from them These were also securely braced, that there might not be any springing, 2 inch plank, 12 inches wide were then placed inside the frame work all around on each side, ends being squared so they would fit closely thus forming a continuous box 18 inches wide around the outside of the silo Wishing to divide the area into three compartments, we arranged for two cross walls in the same manner only making these latter two feet in thickness We were then ready to begin the work of filling the boxes with concrete These were filled during the day all around the concrete being made a little softer than ordinary stone mortar After filling, the plank were allowed to remain in place until next morning, when they were raised up their width allowing only one inch to lap on the wall below The box was then filled all around as on the first day this operation being repeated day after day raising the wall nearly one foot per day all around and including the cross walls The walls were finally completed after having used 537 loads of gravel, just as we took it from the pit, and a few barrels over three car loads of Utica cement After the walls were up, they were treated to a coat of plaster on the inside, made of cement and sand to even up the surface and make it smooth that there might be as little resistance as possible to the settling of the ensilage The bottoms were finished by giving them a three-inch coat of concrete then a coat of plastering over that This finished the inside work and by this time the corn in the fields had passed the proper point for cutting by full three weeks much of it having dried up at the bottoms while in some cases it was dry more than half way up the stalk With this condition of corn we were very anxious to begin cutting, and as soon as the walls had become sufficiently dry, placed our cutting machine and set the power in place We then attached a carrier, identical in construction with the straw carrier of a threshing machine We then began the work of cutting the corn using a Champion reaper to cut and rake off in bundles Two men were placed in the field to assist the teamsters in loading and with the aid of two teams to draw we were able to put through the machine an average of 23 tons per day cutting into lengths of about one-half inch The fodder being dropped at the center of the silo was spread evenly over the bottom by two men who kept up a continual tramp to compact the fodder as much as possible A force of about ten hands were employed in the ensilaging of the corn In 13 days from the time of beginning the cutting was finished and the silo full a little more than even with the top It was then ready to receive the cover which was made from two inch plank grooving and matching and putting them together in sections about four feet wide with three battons made from 2x4 scantling projecting six inches each side of cover that these bearings all might settle together as though but one entire cover the lengths were cut short enough to rest directly upon the ensilage with play of ends sufficient to permit of settling and not binding on the walls When put in place a weight of one hundred and fifty pounds stone per square foot was placed upon it and we had nothing to do but await the proper time for opening In the meantime many discouragements had to be met It seemed as if the community at large had constituted themselves a committee to throw cold water upon our efforts by speaking and looking their disbelief in the success of our efforts, it was too preposterous cutting and piling up a huge pile of green corn, nonsense, and nothing but failure could come of it This seemed to be the opinion of many, whil a scattering few offered encouragement through their I hope you will come out all right and if you do and it proves practicable as you say I shall go into it' Still another was met who wished it might be a failure for to succeed would be to place the power of greater and largely increased production of milk in the hands of all, and the then present what was called low price of milk be driven as a result still lower, and of all the interested parties hereabouts not one could be found who would say he believed we should accomplish our end. One good-meaning friend asked, but a few days previous to the opening of our silo, "what are you going to do for feed for all that stock on your farm you have nothing to count on but your corn stalks and hay, and that is not sufficient, that pile of ensilage will make you a big pile of manure to be sure but will not be of any good as feed it will be all rotten All this experience did not shake us in the least from our opinion of coming success and feeling thus we could well afford to bear the adverse criticisms of our well-meaning friends and neighbors and when the continuous rains of the past fall set in, and nearly, if not quite ruined a large per cent. of the corn fodder standing in shocks in the fields we could not quite help exulting just a little, over the fact of our safely stowed away ensilage, something like 225 tons being well housed and secure from all damage by rain, be it much or little, this being the first point proved to us in favor of ensilage over out door fodder.

Let us here turn back to our subject proper, assuming the time taken since we left our silo covered and weighted to carry us to the time of opening when we were to ascertain whether or not our investment was to prove a failure, and our cherished hopes blighted. The long continued rains and unfavorable weather had caused a heavy falling off in the yield of milk from our dairy when on the 2d day of November, we concluded to remove a a section or two of cover and see what we should see. The stones were removed and the covers lifted, and the ensilage revealed. It had changed in color from the bright green put away taking a more brownish cast, and emitting a pleasant acid smell, the juices seeming to be as when put away in quantity, but slightly impregnated with acid The ensilage, taken into the mouth and chewed, left a very pleasant acid taste The fodder had kept perfectly (as compared with the only sample the writer has ever seen), clear up to the cover and out to the sides, excepting a small quantity at each side of the silo, where the rain had fallen upon the cover and been directed to the outside ends, by the settling at each end more than in the center, through weighting there and not in the center. Let it be here stated that at time of filling the silo the building now covering the same had not been erected, owing to ability to secure mechanics in time, and the weighting was being done, when a heavy shower came upon us. The ensilage was at once taken out and fed to the cows, nearly all at once diving into it as though it always had been their ration and they had waited a long time for it There were a few exceptions, perhaps a half dozen, which did not take kindly to it at first, but during the day all ate their allowance clean, and, ever since, no feed we have ever used has been so eagerly sought after or so cleanly eaten up The shrinkage which was taking place daily in the milk was at once checked, and in a very short time the flow increased one can per day, the cows getting no feed but the ensilage and one small ration per day of hay with a small amount of ground feed. That the cows are thriving upon ensilage, after having had that for nearly six weeks for their principal ration, can be easily seen by any one taking the pains of visiting our farm and looking them over.

The corn was drilled in rows 23 inches apart, the ordinary white corn of the country being used, and, owing to circumstances over which we had no control, the yield was extremely light, one piece of 8 acres giving an average of 14 tons, while the general average was but 10 tons per acre, being not to exceed a ⅓ of a good crop. This small crop may be traced to several sources—first, to planting the wrong variety of corn; secondly, to continual rains, preventing any cultivation whatever; and thirdly, to the drought following closely upon the heels of the rains, the latter cutting off the growth and leaving some not over three feet high The experiment of the past season in the east has shown that when the northern varieties of corn had been planted the severe drought caught and stunted it in growth, while the southern varieties, coming from as far south as could be obtained, were just in their element, surrounded by the extreme heat, and shot up an enormous growth, giving large yields, while the northern varieties gave but a poor return. To the ensilagist herein lies a vital point, which may not be overlooked while searching for means to obtain large yields of fodder.

In conversation with our friend A. to-day, on this subject of the value of our new feed, he remarked he was afraid the cost of putting this fodder into ensilage and housing it up in the silo at the time of year when help was high and scarce—which nearly always meets us at the time we want to do this work—would overcome the profit in the venture Let us look into the matter a little and see if we can ascertain the facts We will not take any supposititious case, but will take the experience with which we have been met in our own transactions, unfavorable as we know they have been when taken in comparison with good average results with others The average yield of hay on our farm has been one ton per acre this season, as nearly as can be computed without actual weight The cost of harvesting and putting this hay in the barn was $2 50 per ton, counting men's time at $1 50 per day and the same for the teams Allowing $10 for the valuation of the hay, we have a net profit per acre of $7 50 Now, assuming that the statement of numerous gentlemen, who have fed ensilage for more seasons than one to be correct 'that two tons of maize ensilage are equal in value to one ton of first quality tame hay for feed,' we have from our field the present season an average of ten tons of ensilage, equal in feed value to five tons of tame hay, at $10 per ton, equals $50, less expense of putting ten tons ensilage in silo, $1 per ton, $10, we have a net of $40 to offset our hay profit of $7 50 We say nothing in this case of the increased flow of milk, which is universally testified to by feeders of perfect ensilage, over the yield from hay But says my friend you do not give a fair average of results in this showing I admit I have not, and will take the actual result obtained in the east last year, and give another showing and see how we come out. Mr. B had one hundred acres meadow from which he cut two tons per acre, worth $2 000 00; less cost of cutting and putting away (estimated) $400 00; leaving a net of $1,600 00 The average yield from his eight acres of corn devoted to ensilage was twenty-eight tons per acre, equal to fourteen tons tame hay for feed, worth $140 00, less cost of putting up twenty-eight tons, $1 25 per ton $35 00, leaving a net of $105 00 per acre, to be offset by his hay product of $16 00 I have no doubt some of my hearers may be inclined to give a prolonged whistle at the expense of this statement, but, gentlemen, I pray you do not whistle until you get out of the woods—for even larger results than this can be shown from the books of not one man alone, but a large number The facts ventured in last statements were given the writer by the gentleman who had the experience, and as he is a man of note, largely known through this section, we have every reason to believe them correct. The ground upon which the ensilage corn was raised on our own farm the past season, was plowed immediately after the corn was removed and sown to winter rye. This crop is to be but early in the season and ensilaged, the cutting to be done when in the blossom This feed we look to for holding up the flow of milk during the shortage of pasturage, which nearly always comes at some time during the season, and results generally in a serious shrinkage of the milk product. The removal of this rye takes place in ample time to permit planting the usual crop of corn for ensilage, which, by dressing the land with manure in the fall will be ready to cut before time to begin the fall cutting of field corn, and give a full crop Through the aid of these two crops we expect to be able to keep up an even flow of milk at a very much reduced cost for the entire year, and thus add a large profit to our business over the present system of producing milk The farmer raising ensilage has no need for hay to feed his stock Every spear raised may be turned into money, using only the straw and dry corn fodder to furnish change of food, many instances appearing where farmers have fed entirely on ensilage for fodder, giving but a small ration of ground feed in connection, and meeting with perfectly satisfactory results in all regards. We have the testimony of one man who had, for long years, fed his stock upon tame hay, with a ground feed addition, at a cost of one hundred to a hundred and fifty dollars per month for the latter, who finally built a silo and filled it with ensilage, and after having fed his milch cows and young stock for three months on nothing but the ensilage, says "My stock to-day are certainly in as *good* condition, if not better, as any winter in twenty years, when I fed the grain and hay combined. The flow of milk is fully up to the standard of any period under the old system of feeding."

In selecting location for your silo, choose that spot which will best suit the convenience of your business, always striving to have both as near the barn as possible. Look closely to the drainage If a gravel hill can be had, you have the best possible natural location, if none such are at hand, and you do not find gravel at the bottom of pit, dig a ditch one foot deep all around your walls and fill with cobble-stones, then lead same into a well or sink, also filled with stone. Be thorough in this, as in all your operations connected with ensilage and silos, bearing in mind the governing principle for the preservation of green foods to be the *exclusion* of air, and, if the work be so imperfectly done as to admit water into the silo, air will also be there, and where these exist decay takes place

Silos may be built from stone, brick, concrete or wood, may be a ditch in the ground an air-tight box, or any receptacle which will permit of a descending weighted cover and be air-tight. One man speaks of running a partition across one end of his basement, making it double with matched flooring with building paper between, running the walls above floor of bay as high as desired, cementing the bottom and painting the joists inside. In this way a capacity of 200 tons was supplied, and at the trifling cost of $50 money out. I will not go further into detail of these cheap silos, as you may read of them all in any one of the works devoted to ensilage.

The entire cost of our own silo, which as before mentioned, was built of concrete and covered with a frame building with side walls eight feet high, shingle roof, roller doors, and every requirement needed to make all first-class, may be stated as follows

Doing the excavating	$165 92
Labor in building the walls, including putting up and taking down scaffolds and staging, drawing 552 loads sand and gravel, and all the mason work	729 34
Paid for lumber and cement	781 00
	$1,676 32

This amount includes full pay for all time of men and teams of the firm, at full wages, and painting silo, and in fact, covers all outlays to date.

In closing this paper, the writer would call the closest attention of any intending to build silos and plant for same, to the following points, all of which are of vital import to the success of the undertaking

In building, do not be afraid of a little outlay, make the structure strong and durable, bearing in mind that if imperfect, or partially preserved ensilage be good, perfect is better, and if your silo be made from stone, brick or concrete, you will have a permanent one, which will keep the fodder in perfect condition indefinitely, while a common affair may do after a fashion for a while, but will never give the best satisfaction "What is worth doing at all, is worth well doing," should here, of all places, be borne in mind *Build early* Do not wait until so late that your corn gets beyond the proper time for ensilaging We began June 28, and were three weeks too late for our best interests. Note this carefully.

In planting, plant early from some of the large southern varieties of corn, which will produce half more fodder than any of our home-grown sorts, plant in drills, dropping about four kernels to the foot, planting two rows four inches apart; then skip 28 inches. This system gives largest yields per acre of any yet tried among oldest ensilagists Cut the corn when it is in the blossom, it being at that time supposed to be fullest of juice Carry to silo as fast as cut in field, and run through machine made for the purpose, and cut into lengths not to exceed half-inch, bear this point of length of cut particularly in mind, as many partial and entire failures have resulted from failure to observe due caution here Cut fast filling at least two feet per day in the silo—the faster the better Keep the cut fodder tramped as well as possible, using great care to have that next to walls thoroughly packed or tramped. Horses may be used for tramping, or one or two men constantly walking over the mass, while keeping it evenly distributed over the bottom, will do very well. Fill the silo three to five feet above top of walls (by using temporary curb of wood) that the walls may be full to top after compacting has taken place. Place cover, made as before described, upon the cut fodder immediately after being filled, and put on one hundred and fifty pounds stone to square foot. Corn cut while at right stage of growth, cut fine, silo filled five or more feet per day, and covered and weighted as above, will produce ensilage as sweet as the day it was cut, and without acid.

In concluding, allow me to say that we feel certain no dairyman, in particular can afford to be without a silo, and we believe the day not far distant when the exception among wide-awake, practical dairy farmers will be the one who does not rejoice in the possession of a large enough and well filled silo.

The Secretary then read the following paper, from the pen of A. S. Heath, Esq., President of the American Institute Farmers' Club:

WHAT IS ENSILAGE, AND HOW WILL IT BENEFIT THE DAIRYMAN?

Ensilage is green fodder preserved in pits called silos. This was first successfully accomplished by Auguste Goffart, in France, in 1873 The green fodder is kept in a state as near the natural food of herbivorous animals as it is possible for use the year round when it is desirable to feed it, either in the droughts of summer or the cold of winter.

The principle of ensilage is essentially the same as that of canning fruits or vegetables' by excluding atmospheric air from these gigantic jars or silos It is one of the most remarkable inventions, benefiting modern agriculture by supplying an enormous quantity of food for animals from the hitherto almost useless dry stalks of the cereals and grasses, which it now preserves fresh with all of their natural and nutritious juices Thus by ensilage a large quantity of cheap food is preserved and by means thereof all of the phosphates are preserved to the soil and therefore two crops may be harvested from every acre at the least possible impoverishment of the soil for these crops are gathered before the maturity of the seeds

The process is simply to cut the crops designated for ensilaging just at the approach of, or early flowering season These are cut by a power cutter about three-eighths of an inch long so as to enable them to settle and pack firmly in the silo so as to most perfectly exclude the atmospheric air Pressure sufficient to exclude and keep out the air is all that is required

Among those who have taken advantage of this process since 1876 in this country are Messrs Francis Morris O B Potter C W Mills Whitman & Burrell John I Holly Dr J M Bailey and scores of practical and scientific agriculturists who have all verified the great value of ensilage by keeping larger herds on less land than it was possible on the old wasteful imperfect and indigestible and unnutritious fodder Variety in crops for ensilage is desirable

The feeding of properly mixed and properly preserved fodders possesses many advantages over the old system First class butter cheese beef mutton lamb and veal can be supplied to a high-priced market all through the droughts of midsummer and the cold of a long and severe winter All herbivorous animals thrive better in winter on ensilage than on dry fodder and the quantity and quality of their products are superior

Maize is doubtless the most profitable and the largest yielding crop It should be cut at early flowering Millet makes a large and profitable crop as also does clover for they can be cut two or three times in a season and cut in early bloom, and when ensilaged, these crops never injure cattle even when very liberally fed The Southern cow pea or bean also makes a valuable crop for ensilaging

By the most exact calculations of those who have had the most experience with ensilage it has been proven that at least one third greater number of animals can be kept on the same number of acres than by the old method of feeding dry crops

All ensilage should be permitted to slightly ferment before feeding At this stage it can be fed with corn meal cotton seed meal linseed meal shorts or bran where high feeding is desirable This plan is especially beneficial to working oxen horses and mules By ensilage the South can keep her mules at less than half the cost of other fodder, and grain thus saving a large sum of money annually Near large towns where grains can be cheaply procured it will be good economy to mix the ensilage and grains together and feed with or without the addition of bran or the various meals

If a cow will more than pay for her care and keeping in the dairy she will nine times in ten pay also a premium on extra food supplied to her The most liberal feeding for any product—whether milk or beef or butter or cheese or wool or pork—pays provided the food can be all digested and assimilated Grains may be preserved perfectly and clear provided they are sweet and free from filth when packed by packing in a silo or air tight pits or vessels for years if need be

Mr White of Staten Island has silos in one of which grains have long been preserved in a state as good and fresh as when dumped from the brewery Grains can be advantageously mixed with the green fodders at the time of filling the silos

Silos may be made of earth brick stone or cement and it is an economy to build two side by side as in thus doing one wall the centre one answers for both silos The dimensions must vary according to the quantity of crops ensilaged Convenient sizes are twelve by twenty feet and fourteen feet deep or twelve by thirty feet sixteen feet deep The depth of the bottom of the silos should be from four to six feet below the surface of the ground to maintain an even temperature but the ground should be under-drained The walls may be made of brick stone or cement cemented on the bottom and walls inside and out and coated with a thin coating of refined and melted asphalt which may be put on with a broom This will make walls impervious to water or air The inside walls must be perpendicular

The silos should be covered by cross sections of plank three feet wide battened and fastened with screws and just long enough to extend the width of the silo so that when lightly weighted they will settle with and cover the section of the silo for which they are made By the removal of the section nearest the door of the silo the ensilage can be cut down like cutting cheese just in whatever quantity may be required for immediate use The cut surface of the ensilage will not ferment proving that ensilage can be transported like pressed hay, though if desired to be kept for a long time it is safer to have it pressed into hogsheads Earth silos or those made of boards or plank are not so convenient or reliable as cement or asphalted walls for these only prevent the entrance of air and moisture Silos should be covered by a roof at least three or four feet higher than the top of the silo to give ample room to fill them conveniently

In the feeding value of maize ensilage it is estimated that 910 pounds are equal to one barrel of corn meal A silo 20x12x16 feet will contain 100 tons of ensilage

Prof Geo H Cook of the New Jersey Agricultural Experiment Station—perfectly reliable authority—estimates that eighty pounds of good ensilage will furnish the full amount of carbhydrates for a full grown cow for a day

Fresh brewers grains may be preserved in silos perfectly sweet, by means of layers of wheat bran evenly spread over each layer of grains Two inches of bran to each layer of six inches of grain makes about the proper proportion This combination of bran and grains makes excellent food for milch cows and when fed with ensilage it makes as perfect fodder as can be used for milk production in winter.

Breeding animals when fed on mixed ensilage seldom abort, and they suffer less in parturition. The young are hardier and thrive well, they are less liable to sickness The winter milk, butter and cheese are of the finest quality, and, being produced in large quantity, and brought to a ready and high market, the total receipts from sales make a most encouraging showing in the animal income of the dairy Many milk producers in the vicinity of New York are now feeding and will continue to feed ensilage and the meals mixed during the winter, thus securing large extra supply of milk.

It is estimated that ensilage can be secured at from seventy-five cents to a dollar a ton, or by this means a full grown cow or ox can be fed for from one dollar to a dollar and a quarter per month. Added to ensilage, a small quantity of corn meal will cheaply feed the working oxen, mules and horses of the farm

Next to a good pasture, no kind of food will so rapidly bring young stock into maturity, and into cash so satisfactorily, as ensilage To animals ensilage furnishes not only a safe, but a most profitable wintering, so that the spring finds the herd strong, healthy, and fit for the labors and purposes of the summer

The country must furnish a large supply of milch cows for milk production for towns and cities. Most of these must be kept within a convenient distance from the cities The system of ensilage furnishes these cows in perfect health, and the cows in turn supply the citizens with good, sound, healthy milk, so that it guarantees both health to the cows and health to the children and persons using it For sick animals there is no food so good as ensilage; for it is as near to green grass as possible There is a positive disadvantage in cutting ensilage crops too late, for late crops have too much woody fibre

The past season has taught us that we might have saved our stock great suffering, and saved ourselves much money, had we provided against the drouth by having secured early ensilage crops for feeding in the dry time

Early calves and lambs will greatly improve on ensilage, as they eat of it as readily as they do when they come on fresh and flush pasturage These very early young animals not only take kindly to ensilage but they may be fattened rapidly and safely for early and high markets by judiciously and gradually adding and increasing corn meal, oat meal or cottonseed meal to the ensilage, by sprinkling it upon it before feeding

For fattening and finishing beef or mutton stock for market, ensilage is the most convenient and reliable fodder when the meals of cereals or cottonseed meal is used.

Ensilage is a cheap and nutritious fodder, and the crops to furnish it do not impoverish the soil, because the phosphates are not removed

During the drought of summer ensilage secures a uniform and constant supply of milk and butter, thus obviating the scarcity of those products at the very season when those necessary articles are in the greatest demand

Milk and butter must be perfectly fresh and sound to be at their finest flavor

O. S. Cohoon asked whether ensilage would keep over one season, or be good to feed in the summer?

E. J. Oatman said it could be kept as well as canned fruits.

Dr. Tefft said it could be kept even two years.

J. H. Broomell said a silo should be so constructed that ensilage could be had in summer as well as in winter.

Dr. W. A. Pratt said he was pleased with the discussion and papers, and was satisfied with his experience; he had fed twenty days; milk increased twenty per cent.

Question—What is the quality of the milk? Answer—No difference has yet been perceived.

C. H. Larkin asked several questions, and said there were two sides to this question; he had recently seen men who were intimately acquainted with the pioneers of the ensilage system, and one said it was a failure, while the others said it was a grand success.

Questions were asked if ensilage would heat or freeze, but these could not be answered satisfactorily, as the parties present had no practical experience in the matter.

On motion, adjourned to 7:30.

EVENING SESSION.

The Association was called to order at 7:30, and the exercises were opened with music by Prof. Quackenbush's Glee Club, who sung "The Farmer and the Seasons."

Miss Bohn then gave two select readings, in a pleasant voice, fairly captivating her hearers by her easy, graceful manner.

Prof. Morrow was to have delivered an address, but as he was absent on account of the death of his brother, no regular topic appeared, and a question drawer was opened.

Dr. Tefft asked, "How can France, with less acreage than the state of Texas, manufacture and export more butter than the United States?"

J. H. Broomell gave as one reason the French farmer was adopting ensilage as a feed for cows.

C. H. Larkin said it was brains that did the work, and brains were better than manure. The education of the French farmers had done much for the country, and we should have agriculture taught in our public schools; was glad to know that the State had an agricultural university, and he hoped much good would come from it. Education properly applied would do much to enable us to excel France.

Dr. Tefft said there were thousands of farms in France which contained but ten acres, and they were tilled; we are land-poor, but if we had smaller farms we would adopt the system of the French, and by so doing greatly increase our farm products.

H. C. Edwards asked, "How can Switzerland, with extent of territory about like Kane county, export condensed milk to America, and compete with that made at Elgin?"

R. P. McGlincy answered by saying the question reverts to the tariff. While the duty on block tin was so great as to almost amount to prohibition, and there was also a heavy duty on sugar, and these two articles were largely used by the manufacturers of condensed milk in America, the Swiss product was admitted to our ports almost free of duty; hence their ability to compete with American manufacturers.

Some one asked, "How to properly handle milk to get the best results?"

H. C. Edwards said you want good cows and good feed, with clean barns, and, as soon as the milk is drawn from the cow, put it into water to cool; milk spoils in a short time if allowed to stand without cooling.

G. W. Sutfin said gentle handling of the cows has something to do with it. If the cows are ill-treated, good milk cannot be had.

J. H. Broomell said the vessels used sometimes have an effect on milk—knew a farmer who used a wooden pail to milk in, but found on changing to a tin one that he got good milk.

Dr. Tefft said, worry or excite a cow, and a great deal of milk will be injured.

E. J. Oatman asked, "Is it possible to take five or six pounds of butter from 100 pounds of milk?" He said a dairyman in Lake county had reported a yield of over five pounds for a year.

George Dempster said that cows, when nearly dry, give much richer milk than when fresh, and, therefore, the yield of butter is larger.

Dr. Tefft said milk contains 12 5-10 solids, and of butter between four and five pounds.

"Is the milk or cream from a cow in high flesh richer than that from a cow in poor flesh, other things being equal?"

The replies indicated that the better flesh the cow was in the richer the milk.

On motion, the Convention adjourned until 9 o'clock.

THURSDAY MORNING.

The Convention was called to order at 9 A. M., and the programme resumed.

Is it the part of Wisdom to deliver Milk but once per day at the Factory?

I. Boies, of Genoa, said it is not. Why, the value of milk consists in the net proceeds. The cost of delivering milk, morning and evening, for the year is ten cents per hnndred for six months in summer; fifteen cents per hundred for six winter months.

How much more is milk worth delivered twice per day than once?

From twenty-two careful experiments, I make the difference twenty-five cents per hundred pounds. The milk of four cows, delivered at factory twice per day, will pay their owners as much ready cash as five cows, their milk delivered once per day only. This is allowing nothing for the quality of the goods. My own experience, which is not guess work, but actual test, shows there is one pound difference in quantity, and four cents per pound difference in quality of goods. I have not told it as large as it actually is, but you wont believe what I have told, but try it, prove it with a true pair of scales. The more particular you are in testing, the more you will see the correctness of my statement. Another evil is cured by having your milk delivered twice per day—that is, skimming. There is more of this done than ought to be. There are dairymen who skim their night's milk regularly, and say it is their own. So it is until they deliver it. Then it is, in law, a crime, as much as to water milk. The sooner milk is delivered to factory, after being drawn from the cow and properly cooled, the more it is worth to the manufacturer and producer. I know there are few factorymen that believe as I do on this subject, but all would if they would test it as carefully as I have.

The best article I have ever read was written by Miss Morley, of Baraboo, Wis. Subject—How to Make Sweepstake Butter. The butter shown by her at the International Fair spoke volumes in favor of her theory. No once-per-day milk in that; no collected cream in her theory, but pure dry air. The milk allowed to stand until ripe for the skimmer, which is about thirty-six hours in cool weather, and twenty-four hours in warm weather. If all the milk of the State of Illinois was handled as Miss Morley advises handling it, I think the net product would be nearly double what it now is. Verily, it pays to do things well. I have often said a man should never be satisfied to milk a cow a year unless her product brought him net $75.

O. S. Tanner and E. H. Seward both beat $80 in 1873, and milk not near as high as now. Not half the cows milked—east or west—produce net $35.

Judge Wilcox said a year ago last May a test was made at the Elgin Butter Company's factory, and, after a trial, those who delivered twice per day were allowed one cent more per gallon than those who delivered once. The test continued for ten days, and was then given up. The difference, he thought, in favor of twice-a-day milk was about twenty-five per cent.

The question was asked, "Why the company discontinued receiving milk twice a day?" and George P. Lord said it was because they could not cool the milk at the factory.

Some one stated that. in Iowa, the yield of butter from milk delivered twice a day at the factory, for six months, was 4.20 pounds. At another factory, for nine and a half months, the yield was 4.16 pounds per day.

I. Boies said the milk at his factory was delivered twice a day. He bought his milk; paid 75 cents per 100 for May, 70 cents for June, and 75 cents for July, He sold the sour milk at four cents per can; sold the buttermilk in Chicago at fifty cents per can—now worth sixty cents. He asserted that water was the greatest enemy of milk; in washing butter, he always added salt enough to the water to save the butter. He good-naturedly stirred up the people, and they fired numerous questions at him, all of which he answered pleasantly.

I. H. Wanzer said he had never received milk but once per day; he could never get enough more out of twice-a-day milk to pay the expense of handling.

JOHN LORENTZEN'S PAPER

Mr. President and Gentlemen.

Notwithstanding that every imaginable topic bearing upon the industry you represent, that is, matters pertaining to the dairy, have been discussed times out of number at these conventions, notwithstanding that prominent men of scientific reputation have given these topics much thought and attention, it strikes me that our knowledge in regard to them is still very imperfect One cause of this lack of progress in ascertaining truths and facts, I think, may be found in the indifference manifested by those who should be most interested, the practical, every-day dairyman; in the indifference of him who daily feeds the cow, who daily milks her; of him who daily makes the cheese and butter, and of those who handle the money obtained from the product.

The plain fact of the matter is, these people shirk what they conceive to be very knotty questions When they stumble over the big words of our dairy professor, it takes the breath out of them When they read the intricate sentences of some scientific notability, it entirely takes the conceit out of them May the oracle of science be ever so much in error or at fault, his word is taken without question, without comment. It makes a wonderful difference as to how you put it to a man.

Insinuate to John Smith that he prevaricates in what he states, he will perhaps consider what you say a joke But tell John Smith that he lies, and he will knock you down. 'I do not wish to be understood as making aspersions against men of science as a class. Some are charlatans, others are sincere and painstaking in their observations, and promu gate their views honestly, but all of them lack the practical opportunities of the every-day dairyman, and it is for these in the aggregate to put their shoulders to the wheel. They should open their eyes while engaged at their labors, observe then everything in the minutest detail, and when meeting at these conventions open their hearts and mouths, and have it out with one another in friendly discussion. Thus I feel confident you will with ease solve problems of value in your business that scientific theories would not.

At the late meeting of the Northwestern Butter, Cheese and Egg Association, held at Cedar Rapids, Iowa, committees were appointed to investigate during the coming year these two questions·

What is the cause of butter in packages bleaching at the sides? and, What is the cause of bitter butter?

To start the ball rolling. I will proceed to answer these two questions, in my way, with the understanding that any one is at liberty to differ with me:

I hold that the bleaching of butter on the sides of packages is caused by the direct action of the air upon the butter, and occurs in this manner The wood of the package is steamed before being worked, thus opening the pores or the cells by dissolving the gum or sap of the wood, and driving it out, enlarging the pores or cells When the package is filled, the brine will ooze through the open pores, thus causing a vacuum, which, by natural laws, must be and is filled with air.

This admitted air does not only bleach the butter—it also absorbs the aroma, peculiar to it, and makes it taste and smell like a tallow candle. My views are borne out by numerous experiments, made with butter and other animal fats with uniform results. The cure of the fault is to prevent the cause.

The second question I will proceed to answer as follows Bitter butter is obtained only during cold weather, and for these reasons, I hold, the butter fat in milk or cream is essentially animal fat. The fine flavors or the bad flavors are absorbed by it from the scum of the milk or cream. Under proper conditions the fine flavor may be developed, and by judicial management incorporated with the butter; the reverse is done by improper management.

What I will state now is no theory, but facts gleaned from numerous experiments and practical observations during a number of years. The fine peculiar aroma—I mean, by it, that exquisite flavor, which, when incorporated in your butter, brings the dollars at the market—is not observable in new milk. During warm weather the milk attains cetic fermentation in, we will say twenty-four hours; at this stage your butter aroma is at its best As fermentation proceeds, in the same degree does this aroma deteriorate, however. The butter, or, properly speaking, the milk or cream, does not become bitter. Hence, I make this deduction, that if milk or cream is allowed by proper elevated temperature to obtain cetic fermentation, the fault complained of—bitter butter—does not occur. We all know that temperature is a prominent factor in all chemical changes I will instance a plain example: A potato, when it has become frozen, becomes sweet in taste, an orange under the same influence, intensely bitter. In the same manner does milk and cream become bitter, very bitter, when held for a space of four to eight days, exposed to the air and a low, freezing temperature, and this flavor is incorporated into the butter. Now if we make our deduction, we find that if a low temperature, as it retards cetic fermentation and formation of the fine butter aroma, it promotes the evil complained of—hence, the cure would be to cause the fermentation by applying a higher temperature within a limited period of time.

With your permission, Mr. President, and a little further indulgence of the gentlemen present, I would like to indicate, how not only fine, but fancy butter may be made during the entire season, and by any one whose head is level or nearly so. I have practically demonstrated it to my own and others' satisfaction.

This formation of this fine butter aroma can be controlled, brought to its utmost perfection, and then when in its prime estate, incorporated in the butter and held there until it reaches the consumer—its ultimate destination. As proof I will mention that one tub of such butter, made in a factory in this State, where hitherto, it had been impossible to make even a passable article, was shown at the late exhibition at Cedar Rapids, and pronounced by a number of the best experts in this country, to be the finest, "by a large majority," of any butter brought there One Iowa gentlemen, a prize taker, candidly admitted that if his butter was worth forty cents per pound, that tub of Illinois butter was worth fifty. A sample may be seen here by any one who may feel interested. I conclude with the hope that my remarks may imbue some of the dairymen present with the idea that there is always room on top.

Mr. Joseph Sampson, of Storm Lake, Iowa, read the following paper:

THE CREAM GATHERING SYSTEM.

Gentlemen —Being requested by your honorable secretary to make a statement at your December meeting in regard to the advantages of the cream gathering system, adopted by myself where I reside, during the past season, I would briefly state, the advantages of this new system consist in its bringing a greater number of patrons scattered over a wider area into association than could be done under the old system. At our factory, during the past season, we gathered cream at a distance of over twenty-five miles from the factory—that is, we took in cream, hauled in a direct line to our factory twenty-five miles; besides other cream that was hauled to a railway station the same distance, and then sent by freight train forty miles. From all of this cream we made good butter. At our factory during the month of July we made on an average 1,600 pounds of butter per day. This butter all sold at the highest quoted prices for Iowa creamery butter in the city of New York. This simple statement I make to show that under this new system, introduced by Mr. Fairlamb, a wide range of country can be gone over, and a valuable product saved from the Chicago classification of "grease butter." We were able to pay our patrons more for their cream than they could have sold their butter for, if same had been sent to Chicago.

We were paying throughout the summer months, fifteen to sixteen cents per guage for cream. Taking 100 pounds of milk to yield four guages of cream, or four pounds of butter (roughly computed) we were thus paying our patrons as much for their cream on the farm as was being paid in the eastern part of our State by the factory operators, who bought milk by the hundred weight, and raised the cream in their factories. During the summer, in Delaware county, Iowa, 200 miles east of us, farmers who put in their labor of hauling milk to the creamery, received fifty-five to seventy cents per hundred pounds. Average, say sixty-five cents per hundred pounds. At the same time our farmers were receiving from the same quantity of milk, for the cream alone, sixty to sixty-four cents.

These figures are approximate, but when it is taken into account that under this new system we can gather in under one management a large number of patrons, scattered over the wide area named, the economic advantages are apparent.

For a sparsely settled country, it is the best system that can be adopted. It enables the farmers to retain their skim milk on the farm, in good condition for feeding their calves.

This is a very important item with our farmers in Iowa. Large tracts of vacant land adjoin nearly all our Northwestern Iowa farms, over which cattle may range at will, free of cost to the owners. The profits from the annual increase of stock are very large To attempt the introduction of any system out in this part of Iowa, which would require the hauling of the skim milk off the farm, would be a very difficult task.

Having no interest in cans or creameries of any kind, I simply state the two essential benefits that accrue to the farmer in going into this new system of dairying. 1st The saving of labor not having to leave his grain farming to haul his milk to a distant factory. 2d The retaining his skim milk in good condition on his farm for his calves.

To the factory operator, the advantages of the new system are not so great as to the farmer But what is for the best interest of the actual tiller of the soil must be first considered. He is the one to be cared for and catered to in the long run.

In order to make the new system a success, the patron must be honest, and must not conspire with cream gatherers to defraud the factory, or practice any of those petty dodges we have had to meet in our short experience

I don't want to go before Illinois farmers and dairymen to vent my spleen, or make any complaint about Iowa farmers, but I would say that I consider it the duty of the farmer to encourage by word and deed any legitimate creamery enterprise, wherever started

My efforts have been by many derided, and my motives impugned. From the first I was told we could not make good butter out of our wild or natural prairie grass, and also that we could not afford to pay for cream what it is worth, and send men around to collect it. Both of these obstacles we have overcome. Our butter has been shown at Elgin in October, and was declared of as good quality as your average creamery, and as to giving enough for cream, we have paid from fifteen to twenty-five cents per inch or guage on Mr. Fairlamb's can since starting

I consider that Mr. Fairlamb's invention will be to dairymen in the wilds of the west what Robert Fulton's invention was to navigation in the east By adopting Mr Fairlamb's plan, new settlers on our prairies can combine and start creameries everywhere as soon as they can get an assured patronage of 1,000 cows They can afford to pay a first-class butter maker to manage for them and if they will all be honest and cordially cooperate together, they can make just as good butter under this new creamery system in the plains of Iowa or Southern Minnesota as can be made anywhere in the world.

I don't want to advocate this system for Illinois or the older settled portions of our country, but for the new settlers on our prairies, for the pioneers of the genuine dairymen, I cordially endorse this system as being a wonderful step in advance over the average home-made butter-making system.

Mr. I. H. Wanzer, of Elgin, read the following paper:

WHAT ADVANTAGE, IF ANY, HAS THE SYSTEM OF GATHERING THE CREAM OVER THE ORDINARY METHOD OF BUTTER-MAKING?

This system of cream gathering, or what is more properly called the Fairlamb system, is comparatively new, and all of its benefits have not yet been brought out, and we feel at a disadvantage when comparing this with other plans better established As yet this plan has shown to better advantage in the newer settlements of the west, where stock raising has been one of the first points looked after. In fact, it has become a necessity to them. So well has it worked in the newer dairy districts, that the older are now inquiring after it, and in many places the plan is already superseding the older methods of butter-making. There are now six creameries within forty miles of Elgin being successfully operated upon this plan, all taking the place of the old plans of butter and cheese making together. This plan, we think, will yet show dairymen how to get more good butter and less poor skim cheese. There has been enough already developed in this system to satisfy all that when compared with the old way of making butter at home, the results are simply grand, taking, as it does, the cream from the farmer's door, releasing him of the labor of making the butter as well as the expense of bringing about them those conveniences requisite to make even a fair quality of butter, always paying him as much for the cream that it takes to make a pound of butter as the butter would fetch after being made, and paying cash instead of store pay. The manufacturer, with his improved appliances for gathering, churning and working, converts the cream into an article for the export trade, virtually bringing the most obscure farmer of the distant west, with his two or three cows, right into competition with his more favored neighbor, who may chance to live near the great diary centres of Elgin or Dundee, and instead of having to rely upon a home trade, on account of the low grade of his goods can have the whole world for his customers. Now, at this age of dairying it would be folly to institute a comparison between the new and old way, unless we can show money in favor of our plan: There is no argument so good among men, and our experience leads us to believe dairymen no exception to the rule. In my comparison I will try and show where the dollars come in.

To the private dairyman we say we will give you as much for your cream as good dairy butter is worth in the market and furnish you cans to set your milk in that will produce one-eighth more cream than you can get off your pans. For instance, the farmer that makes eight pounds of butter per day through the year one cow will give him nine pounds per day, amounting to 365 pounds in the year at 25 cents per pound—$91 25. In addition to this his skimmed milk is left sweet instead of sour to feed young stock upon, and let it be remembered that he is relieved of the trouble of caring for or even skimming the cream.

Now, when we come to compare this system with the so-called associated dairying we may have a more difficult task to figure the dollar on the side of the Fairlamb plan, and, as this convention wants solid facts and nothing else, we'll make the comparison drawing somewhat from our own experience in both branches of butter making and somewhat upon the experience of others First, we would say to the farmer that has no taste for diversified farming and wants an excuse to go to the town or factory every morning, that some of the items entering into our calculations will figure for naught The farmer carrying milk to the creamery expects, if he has not already sold, $1 50 per 100 pounds for six months commencing with October 1. Let us see what this farmer would have done had he sold cream instead of milk First, he would have got four and a half guages of cream to the 100 pounds of milk This cream at the average paid in Northern Illinois (27 cents), would have brought $1 22 value of skimmed milk per 100 pounds, 25 cents, cost of carrying milk to creamery per 100 pounds, 10 cents—leaving 7 cents per 100 pounds in favor of selling cream In the item of carrying milk to the factory, I think it will be conceded that 10 cents is about what it is worth to carry milk the average distance In the matter of fixing a price upon the skimmed milk there would be a greater chance for difference, and without experimental tests to guide us in this matter, we arrive at conclusions somewhat from our own experience and largely from the experience of others Many dairymen of Knox county Ill, will tell you that 100 pounds of skimmed milk are worth as much as a bushel of corn to feed—not to feed alone but as one explained by supposing a case He said "If I had twenty stock hogs to fatten, and 100 bushels of corn to feed then I would think that I were making money to exchange 20 bushels of my corn for 2 000 pounds of skimmed milk, and feed them the 80 bushels of corn with the 2 000 pounds of milk I am sure I could make more pork and in less time than I should, to have fed the whole 100 bushels of corn with water" Another said "I am milking fifteen cows, and raising twelve of my best calves. I take about two-thirds of the skimmed milk together with some oil meal, and raise calves that make as good yearlings as those of my neighbors who let their calves suck the cows The other one-third of the milk I feed to six brood sows, with an average of six pigs each And by this mode of management I think my milk worth 30 cents per 100 pounds" My individual experience leads me to place the price of skimmed milk at 25 cents per 100 pounds, when used to feed young stock It will be conceded by all that in order to give calves or pigs the proper start in life, they must have milk These calculations would place the dollar on the Fairlamb side. These conclusions anticipate good management in all the details of the gathered cream plan, and so does it need close management in the butter and cheese factory to wring out $1 50 per 100 pounds for milk for the six winter months. The proportion of failures in creameries are likely larger in the Fairlamb creameries than in the others for the reason that our plan of working is new, and some time and patience is required to be able to successfully operate creameries upon this new system Some of us can go back in memory to the early successes and failures in inaugurating and perfecting systems whereby an article of butter and cheese could be made in this section of the west that might be accepted in the markets of the world And some of us have lived to see the blush mantle the cheek of those who predicted that it could never be done Then we looked to the east for guidance—to-day they come to us asking how it is done So we would say to those that shake their heads and look wise when looking over this new departure hold on Before you know it your neighbor will have distanced you in your self-conceit, as many of us that bore the burden of opening up this new country to the dairy interest have seen others left far in the back ground because to lend encouragement to us in that early day was in some way to conflict with their present arrangements It is a matter of fact that wherever the gathered-cream system has come in competition with other forms of associated dairying and has failed the causes have been traced directly to mismanagement Good butter can and must be made upon this plan, and in order to do this all the details connected therewith must be attended to and when understood are no more complicated than in other systems Of the 170 creameries running in the United States using the Fairlamb can alone, ninety per cent of these are a pronounced success The fourteen creameries under our care the past season although the first season in every instance succeeded beyond the most sanguine expectation of the proprietors, and notwithstanding that some of these started late in the season there was an aggregate of over 800,000 pounds of butter made in them, and all selling fully up to Elgin Board of Trade prices

The late exhibition of butter, made at Cedar Rapids, Iowa, where 11,000 pounds were shown, made from cream, gathered from the Fairlamb can alone, has gone far to dispel the feeling among butter dealers and consumers that good butter could not be made from this plan This, coupled with the fact that gathered cream butter, when made by competent butter makers has brought the very highest prices in all the eastern markets, will do much to inspire confidence in the system There is another phase connected with this plan of dairying It admits of a greater range in farming. We need more diversified farming, the milking of cows alone as is now practiced in our larger dairy districts, seems to narrow down the chances of profits, whilst the raising of stock and other laudable and healthful forms of farming would not only increase the chances of gain, but put the farmers' boys in a way to become acquainted with more than one agricultural pursuit, with a view to enlarge instead of narrowing down the mind

Besides this, the Fairlamb system would give each dairyman the opportunity of raising his own cows, instead of filling up the waste by going out among those that follow this form of dairying, and taking up with the culls of their herds The tendency of the associated forms of dairying being to lower instead of elevate the standard of their herds.

In conclusion, I would say that I believe that Mr. Fairlamb has given to the world a system for making butter, when perfected, that is destined to revolutionize the whole butter-making plans of the world, and I believe the day near at hand when it will be as strange to find a churn or milk pan in the dairyman's house, as it is now to find the spinning wheel and loom in the wool-grower's home.

At the conclusion of the above paper, the convention adjourned to 1 o'clock.

AFTERNOON SESSION.

The Association was called to order at 1 P. M., and the question under consideration at the hour of adjournment was resumed.

Mr. C. C. Buell, of Rock Falls, read the following paper:

WHAT ADVANTAGE, IF ANY, HAS THE SYSTEM OF GATHERING CREAM OVER THE ORDINARY METHOD OF BUTTER MAKING?

This is a question in dairy economics, and I have no disposition to approach its discussion in a partisan way. I feel quite willing to allow those who have fixed opinions on the subject, or even prejudices, to enjoy them undisturbed. I have no proprietary interests involved, no schemes pecuniary or other interest to advance, and I shall offer the few things I have to say in the spirit of disinterestedness, but with the wish that what is most for the interest and prosperity of the masses engaged in dairy industry may prevail. The older methods of butter making have been very thoroughly discussed at conventions and by the press during the last ten years. Their advantages and disadvantages may be regarded as well understood. There is little need, therefore, of reference to them, and we can give our attention to facts, figures and other considerations pertaining to the new method, leaving our hearers to make their own comparisons.

The first advantage which may be named for this method of butter making is that it is especially adapted to those neighborhoods in which the dairies are small and the territory desirable to be covered, large. Indeed, no other system of dairying is practicable in such a case. Under favorable circumstances a cream gathering creamery can cover a region of eight to ten miles radius, with reasonable, if not maximum success. I do not believe, however, in mammoth creameries sustained by the long transportation of cream—transportation by relays of teams, perhaps, consuming much time and producing over much agitation of the cream in transportation. Such enterprises I should expect on general principles to fail of the highest success. The area named, however, can be covered by cream gathering teams, which will deliver their loads without transfer and in good order. Such teams can pick up cream at farm houses in even so small quantities as three to five inches a day to advantage. Indeed, then, three to ten cow dairies are relatively most benefited, probably, by this system, and it makes possible a mixed system of profitable farming, of which dairying is a part. It does not necessitate large expenditure on the part of dairyman, nor require special skill, beyond what the proper care of milk and the suitable feeding and care of stock require. A few farm dairies have turned out an exquisite product, but in general the farm dairies are the source of the most of our poor butter. The result of this system to this class of farmers has been to greatly increase their income from their herds, and thereby to multiply their profits, while at the same time materially lessening their labor. The success of the system under these circumstances, therefore, has been most marked, and so far as I know, without exceptions, giving satisfaction to all concerned. My own experience with this method happens to have occurred under precisely these circumstances, and we give in this connection the prices we have been able to pay for cream during the current year: January, 23c. an inch making a pound of butter; February, 24c.; March, 22c.; April, 20@22c.; May, 16@18c.; June, 15c.; July, 15@16c.; August, 17@20c.; September, 22@25c.; October, 26c.; November, 26@28c.; December, 28c. Relatively to the market price of butter a larger price was paid during the warmer season of the year, for the reason that the expense of gathering was less, the expense of selling less, and especially the yield of butter per unit of measure, or inch, was better—the cold weather bringing serious shortage of yield per inch, a matter which must be taken into consideration of both manufacturer and dairyman.

Second. A creamery situated amidst large dairies would enjoy advantages much superior to those in the case above described. The labor and expense of gathering would be greatly lessened. The circumstances of cream-raising could be and naturally would be more perfectly controlled, so as to give the best quality of product. Indeed, where butter-making alone is the object, it would seem to be the cheapest as well as the very best mode of butter-making. I have in mind a creamery for the making of butter alone, managed on the milk-carrying plan by associated farmers, which I am told by different persons connected with it, is being compelled to change to the cream-gathering plan or lose its customers. This occurs where complete harmony prevails, and where success according to the system has been considered achieved. When the object is to make good butter and poor cheese in addition from the same milk, of course another element comes in. This presents a tough subject in more than one sense. Our Conventions may very properly discuss it in the future as in the past, but the whole business will ultimately turn upon the question of profit and loss, in a commercial way. But it may fairly be submitted in this connection whether the value of the skimmed milk, and that usually skimmed sweet, would not more than over-balance the profits of making and selling a poor cheese. I am not prepared to give precise results of my own experience in the feeding of skim milk, but taking the evidence of others it may be rated at not less than 20 cents per 100 pounds, and when skillfully used as a part ration for young stock, either calves, pigs or colts, its value is far above this. Of one thing I am quite positively convinced, that the sweet skimmed milk is of considerable more value than the sour swill which would come from the factory

It is to be remembered, however, in the consideration of this subject, that cream-gathering business is in its infancy The best modes in many particulars have not yet been found out, or when found out, have not generally been adopted. The business is in an experimental state, and it has yet to carry the load which inexperienced beginners, unskilled manufacturers and those operating under unfavorable circumstances, are laying upon it. Even the unit of measure, for measuring cream, has not yet been agreed upon—the quantity taken by different parties using different apparatus, varying not less than 10 per cent probably in extreme if not more Most of the cream gathered has been transported in cans of various sizes, liable to the extremes and hurtful effects of cold in winter and heat in summer. The experience of the last year indicates that these will ultimately be displaced by an anti-heating and anti-freezing tank which will deliver the cream without change of condition When these improvements in details are complete, as I believe they are destined to be and economic questions relating to the industry become settled on business principles, I anticipate not only a greatly increased growth, but increased and satisfactory profits to all concerned. When that time comes the cost of gathering will not exceed one cent a pound of butter in summer and one and a half cents or two cents in winter. The expense of manufacturing will not be more than one-half that of making butter from gathered milk, and the capital invested in buildings and fixtures will be correspondingly less.

The quality of the product will be as good as can possibly be made from the milk of different herds The strife among dairymen will not be to produce the most possible of milk regardless of quality, but to produce the most and best cream The effect in improving the character of our butter dairy herds will be most marked and beneficial, but on this quite important point I will not take time to dwell

In conclusion I would say, that the genius of Mr C C Fairlamb, who devised this system, and put it into practical execution is worthy of all honor and fame, and both will be secured to him together with the gratitude of the masses of dairy farmers I predict that within ten years, four out of five pounds of the butter product which reaches the great dairy markets, will be made according to this system While I do not believe that any individual dairyman who has already built up a reputation for producing fine goods has any special personal interest in increasing the magnitude of the dairy business in this country which will inevitably accompany the success of this system coupled as it will be with the natural advantages of the great pastoral regions of the west, still the disinterested and benevolently disposed are watching and noting the progressive development of the great natural industries of this country with much interest While I believe it is in the interest of public health public morality business prosperity and the general public good to suppress hurtful adulterations of food of all kinds and of butter and cheese in particular by the intervention of law I regard the cheap and abundant production of good butter the best remedy of all This I believe will be the only effectual and abiding remedy If our great dairy industry could be allowed to develop under the fostering influences of the great natural advantages for production which this country possesses as compared with other parts of the world if our dairy products could find their natural outlets untrammeled with commercial restrictions which delusive theories of protection and monopolistic influences impose upon our foreign commerce I should expect to see this branch of agricultural industry, together with other branches increase to a magnitude not now dreamed of by the most extravagant prognosticator of events. As it is it will keep pace with the other branches of agricultural labor for the pursuit of which the creator has given this country pre-eminent advantages and I hope to see the dairymen of our own State in the vanguard of those adopting improved methods, and receiving correspondingly increased profits for their industry intelligence and enterprise.

C. S. Kilbourne, of Elgin, was also assigned to this topic, but prepared no paper. He spoke, however, briefly, but said he had no experience in the matter; yet, from observations, did not believe the system practical for Northern Illinois.

Mr. Wanzer's paper drew out many questions; especially from the producers of milk, who inquired among themselves to know if they, who were delivering the milk at the factories, were getting all out of the milk there was in it. The discussion was prolonged and participated in by nearly all in the room; some favoring the system, some a trifle skeptical and others opposed to it.

The Chair at this juncture appointed the following gentlemen to receive Governor Cullom, upon his arrival at the depot: H. E. Hunt, George P. Lord and R. M. Patrick.

The convention now proceeded to transact miscellaneous business, and the first was the presentation of the

TREASURER'S REPORT.

R. M. Patrick, in account with Illinois State Dairymen's Association:

March 8, 1880, to cash received from Dr. Tefft.	$24 50
Dec. 17, " " " " 56 members	56 00
" " " " " " Donations	6 50
Jan. 27, 1881, " " " Dr. Tefft, balance	20 00
	$107 00

CONTRA.

March 8, 1880, by cash, per Anderson	$18 75
Dec. 17, " " " Dr. Pratt	10 00
" " " " " Hall rent	12 00
March 2, 1881, sent Dr. Tefft balance	66 25
	$107 00

On motion, received and adopted.

SECRETARY'S REPORT.

Your Secretary came into office just at the close of the last session, and as soon thereafter as possible issued the annual report, which was placed in the hands of the members. The report speaks for itself. During the year just closed the Secretary has conducted a large amount of correspondence; not alone with the members and prominent gentlemen interested in the dairy industry, but with the Governor, members of the State Legislature, and last, but not least, with the Minister resident at Washington from the Argentine Republic, who, having heard of Illinois and her dairy and cattle interests, sought information from this Association; to lay before his government. During the year I have expended for stationery, postage, postal cards and telegrams, $1.73, which amount is due from the Association. Respectfully submitted,

R. P. McGLINCY, Secretary.

On motion the Secretary's report was received and adopted, and the amount due for stationery, etc., was ordered paid.

C. C. Buell extended an invitation to the Association to hold its next annual meeting in the city of Sterling He said they had ample railway facilities, and hotel accommodations, and a lively interest would be shown by the farmers and dairymen of that section.

S. W. Kingsley moved to accept the invitation, which was carried unanimously.

George P. Lord deplored the fact that there were no reliable statistics of dairy products, and the dairy interests did not receive enough attention from the agricultural department of the State and country. In illustrating, he quoted from Chicago papers, which, he said, were subsidized, to the effect that dairymen were making so much butter and cheese that the market would be overstocked this winter. When this statement was made butter was 36 cents a pound; now it is 45; which shows that the writer came as near the truth as a man could in shooting around a tree with a gun. He showed that the statement was made for the purpose of lowering the price of butter and cheese. He moved that a committee of three be appointed to procure reliable and full statistics of trade.

Secretary McGlincy seconded the motion and, in doing so, said that he was endeavoring to collect statistics from members of the Elgin Board of Trade, so as to show what was being done in the way of producing butter and cheese.

Others followed, showing the need of this, and commenting severely upon the lack of information about business in the State and country, and that the State Agricultural Society did not pay sufficient attention to the dairy industry.

The motion was carried unanimously, and the President was empowered to appoint the committee.

The Secretary read the following paper:

FOREIGN MARKETS FOR AMERICAN DAIRY PRODUCTS.

BY T. H. GLENN, OF CHICAGO.

The growth of the export trade in butter and cheese of this country is steady and encouraging In 1878 the exports of butter were 23,000,000 pounds and in 1880, 28,000,000 pounds. During the latter year we exported to Great Britain alone 40,000,000 pounds of cheese, and 125,000,000 pounds in the aggregate to all foreign ports The following table gives the quantities in pounds of cheese exported from the single port of New York

	Total.	Same time last year
Liverpool	61,695,760	64,271,007
London.	11,112,068	8,833,361
Glasgow.	18,198,262	15,270,139
Bristol	7,267,206	9,771,070
Cardiff	238,083	932,960
Hull	1,107,076	259,141
Newcastle	719,492	509,819
Havre		120,980
Hamburg	951,670	119,250
Bremen	42,942	575,480
Other ports	2,451,519	1,715,850
Total	103,874,187	102,290,370

The total export of butter for the same period this year and to nearly the same ports, was 14,549,773 pounds—a slight falling off from the quantity exported during the corresponding period in 1880.

Another item may also possess an interest to dairymen in this connection and that is, that the shipments of oleomargarine from New York for the same time aggregated 4,220,573 pounds, but for the corresponding time last year they were 5,939,036 "Oleomargarine" does not seem to be in quite as good odor with foreigners this year as last What the entire exports of dairy goods for the year will be, of course, cannot now be definitely given, but that a considerable increase over former years has occurred is now certain. And this, too, notwithstanding that imitations or spurious articles—as oleomargarine butterine, suine, etc—have entered into competition with genuine butter

Before referring, especially to the opportunities presented for cultivating foreign markets, let us briefly consider the home consumption of cheese The cheese product of the United States per annum, is about 400,000,000 pounds and, as stated above, we send abroad about 125,000,000 pounds annually which leaves 275,000,000 pounds as the quantity consumed at home England has a population of 25,000,000 and her annual consumption according to Hon X A Willard, is over 500,000,000 pounds or 20 pounds per capita To consume our entire annual product at home, would only be at the rate of eight pounds per capita. Mr. Willard is also authority for saying (and you know his is high and reliable authority), that if we use cheese as freely in this country as it is eaten in England our annual consumption would require one thousand million pounds It is, then of much importance that our cheese-makers shall study the home market, or study the most feasible measure of increasing the consumption of cheese at home. It is gratifying to know that this consumption is increasing, and that during the past two or three years it has been augmented from 12,000,000 to 15,000,000 pounds annually. But this increase is due in no small degree to the rapid influx of a foreign population An idea of the magnitude of the stream of foreign immigration is gained by the statement recently published from the statistics, that 179,743 Germans arrived during the nine months in 1881, ending with September 30, and of all nationalities for one year ending July 31, 700,000 arrived taking all the ports together. It is not likely that the number arriving annually will decrease for some years to come.

In European countries, as a rule, a much larger amount of cheese per capita is consumed than in the United States. Our foreign population are nearly all of them liberal consumers of cheese. They would probably consume quite as much per capita in America, as they did at home, if the kinds and quanity of cheese to which they are accustomed were at hand. As it is, they consume no inconsiderable amount of American cheese, but if the articles that have formed so large a portion of their diet were readily obtained, the quantity would be vastly increased. Here, then, is a wide field for extending the manufacture of cheese in this country. It is only to a very limited extent that cheese resembling any of the foreign makes can be found. The Cheddar cheese is manufactured almost exclusively, and while much more of that standard make ought to be consumed here there is a great opportunity to increase the cheese product of the country in the manufacture of other varieties. The immense number of Germans who have sought homes among us, and are still coming in an increased ratio, suggests the manufacture of Limburger and Gruyere to suit tastes that have been acquired in the "fatherland." The Hollander looks in vain for his Edam and Gouda and it is seldom that the Swiss encounters his Schweitzer Kase. The variety may be, no doubt, profitably increased by manufacturing goods suited to the taste of our French and Italian populations.

But the consumption of cheese by our native population might be largely increased if a small fine cheese was in the market. The bulk of the best cheeses made in this country is sent abroad, leaving only inferior goods for home consumption, aside from a small portion of the finer makes It is hardly to be expected that the consumption of cheese at home will materially advance under this state of things Second and third class articles of cheese are not the kinds that our people desire but that they would take kindly to fine cheeses in sizes suited to their wants weighing seven or eight pounds is highly probable

A steady home market is desirable from another consideration Cheese makers know that prices in England who takes 65 per cent of our cheese exports), are subject to great fluctuations which necessarily affect prices in the United States If a home demand was created which approximated the annual product of the country, there would be much greater securities for the manufacturers

In the United States where our population is constantly and rapidly increasing and changing and new industries are being rapidly developed it is imperative that those who are engaged in any of the rural industries shall be on the alert keep abreast with the age and seize upon the opportunities offered for the profitable pursuit of their avocations The cheese industry presents one of the most feasible of such opportunities and our dairy friends will do well to give the matter their attention.

A word more upon that branch of the subject relative to the influx of foreigners to our shores The fact may well be emphasized that the makes of cheese in this country should be varied not only to suit the wants of Americans but to cater to the tastes of the vast and increasing influx of foreigners who are seeking homes among us Foreign fancy cheeses are now imported to the amount of $650 000 per annum If we can produce some or most of these varieties so that they are equal to the imported article, we may eventually find an outlet for large quantities of cheese other than Cheddars.

The best way to cultivate a foreign market in any commodity is to ascertain what that market requires and supply it in kind and quality as nearly as possible It is folly to send what is not desired for custom and prejudice will stand in the way of profit in ventures of this kind however good an article may be No time or money need be lost in trying to educate a foreign market save by slow degrees into buying something different from what has long been demanded The success of the English in selling their manufactures all over the world is due, mainly to finding out in advance what was wanted A description of some imported cheeses has been furnished by a New York dealer in them which I have no doubt will interest you

England produces many varieties including the well known Stilton Cheddar Queen s Arms Cheshire Wiltshire Gloucester, Leicester and Derby Stilton cheese is manufactured chiefly in Leicestershire, and in shape is like a cylinder ten inches high and eight inches across it is very delicious and worth here about 46 cents per pound at wholesale Cheddar is similar to our factory cheese and is made of various sizes generally 12 inches wide and a foot high but sometimes larger and weighs from 70 to 120 pounds It is worth 35 cents Cheshire and Gloucester are also flat cheeses of about 70 pounds each packed two in a case and worth now 29 cents and 30 cents per pound respectively

From France we have the Roquefort the popular after dinner cheese with its greenish veins not at all attractive to those who first see it Roquefort cheese is made from the milk of sheep and goats principally from that of the former which are of the celebrated Larzac breed noted for their unusually large udders The cheeses are ripened in vaults constructed in the limestone caves and fissures which are found in the rocks that over hang the village of Roquefort The peculiar characteristics of this singular kind of cheese can only be obtained by ripening in these vaults Each cheese weighs about five pounds and is worth 35 cents per pound France also produces many other kinds of fancy cheese among which are the Camembert Pont l Eveque and fromage de Brie which are small soft creamy cheeses of the consistency of thick paste and are great aids to digestion when taken after a heavy dinner Camembert is imported in boxes of five dozen pieces and wholesales at $3 75 per dozen Pont l Eveque is worth $3 50 per dozen while fromage de Brie which comes three in a basket brings $2 5 per piece Neufchatel commonly called Bonbons are worth 10 cents per piece are similar in appearance to the so-called Neufchatel cheese made here and with which almost every one is familiar owing to its similarity to pot cheese France also manufactures in the county of Doubs on the boundary line to Switzerland a Gruyere cheese, similar to the delicious Swiss product but the quality is inferior to the latter

From Switzerland we get the genuine Gruyere or Swiss cheese which is usually three feet in diameter and weighs about 150 pounds, and is imported in tubs containing four cheeses It sells at about 23 cents per pound Sapsago or green cheese in shape like an inverted cup also comes from Switzerland Each cheese weighs half a pound and is imported in casks containing from 250 to 400 pounds selling in a wholesale way at 18 cents per pound The small round Edam cheese in shape and size like a cannon ball with a thick rind of a bright red color on the outside comes from Holland, and is worth $11 50 per case of six It is in great demand for vessels about to sail on long voyages, as its smooth tough rind resists the attacks of insects and the action of the atmosphere Holland also produces the Gouda or pategrasse which, in appearance, is like an English dairy cheese and in cases of six cheeses brings 30 cents per pound Gouda kosher Gowsher kaas is also from Holland and worth 31 cents per pound while another Holland cheese, called Leyden, or Cominje kaas, is only valued at 24 cents per pound

Parmesan cheese the only kind proper to cook with macaroni, is imported from Italy in tubs containing four or five large flat round cheeses which are called loaves and are worth 34 cents per pound Italy also sends us Roman (formaggio Roman) at 28 cents, Strachino di Gorgonzola at 32 cents, and Caccio Cavallo di Napoli at 30 cents per pound The demand for the different kinds of foreign cheese is in about the following order, the first-named being most called for, and so on in gradually lessening quantities in the order named Gruyere, Edam, Roquefort Brie Camembert, etc Stilton, Parmesan, and English Cheddar etc What are known as American fancy cheeses are Pineapple, Little Champion Young America, Victoria, and English dairy, all of which are in increased demand in this country.

There are numerous imitations of foreign cheese made in the United States, as for instance Swiss, made in New York, Wisconsin and Wheeling, W. Va., sells for 18 cents per pound; Limburger, made in Wisconsin, New York and Watertown, N. Y., wholesale at 17½ cents per pound; Muenster 20 cents per pound; fromage de Brie, $1.25 to $1.40 per piece; Neufchatel, 3½ to 4 cents each; cream cheese, $2.50 per box of one dozen, and fromage d'Isigny, $2.20 per box of six pieces. All of these cheeses are excellent imitations of the imported, and as they are made by the same process as abroad and by foreign workmen, they will no doubt in time supersede the imported article altogether. In fact, Limburger is made here so cheaply and in such perfection that its importation has almost ceased, while some has already been exported to Europe. This industry of making new styles of cheese is only in its infancy in the United States, but it is expected that the capacity of the factories now in operation will not be sufficient to supply the demand. In fact, there are new factories in process of building; one at Theresa, N. Y., will cost, when finished, $15,000, and is intended for the manufacture of Limburger cheese alone, the entire product of which, it is expected, will be consumed at home. There are, however, some foreign cheeses that have not been successfully imitated here, and they are Roquefort, Stilton, Parmesan, Camembert and others.

Now a few words about the foreign markets for butter. The dairymen of this country have, if they will only properly cultivate it, a wide field for their dairy products in South America, especially in Brazil. A number of the Brazilian states or provinces and towns consume imported butter in considerable quantities, some of which is made in the United States, but by far the greatest quantity—indeed the bulk of it—is made in Europe. Our butter dairymen will do well to investigate this outlet for the American product, ascertain what is required by the taste of the consumers and fill such requirement with the desired goods. France and Denmark supply the most of the foreign butter consumed in Brazil, and we are not willing to admit that those countries are ahead of our own intelligent dairymen in the excellence of their products.

The climate of Brazil is so hot that few persons undertake to make butter, and this condition of things will doubtless continue for a long time at least.

The province of Santos consumes about 20,000 pounds of butter per month, and is supplied principally from France. It is sent mostly in tins of 1, 2, 4, 20 and 60 pounds. In Rio Grande the small consumption is supplied mostly from France. Porto Alegre, which consumes some [illegible],000 pounds monthly, was formerly supplied by the English, but the French and Danish merchants have supplanted them. The price of butter in tins is 67 to 77 cents per pound.

The butter market of Bahia is of considerable extent. The annual importation is something over 1,200,000 pounds. The larger part of this is French butter, a small part English, some Danish and some American.

In Rio de Janeiro the market amounts to 2,000,000 of pounds per year, which was formerly supplied almost wholly by England, but France now has the largest share—about 1,200,000 pounds; Denmark, 600 pounds, and the United States and other countries, 200,000 pounds. We send some to this market in tins.

Para consumes some 400,000 pounds, and was formerly supplied by Ireland with butter too much salted, but Denmark sent a better article in tins, and during the past few years Normandy has sent a considerable proportion of it in tins. The United States have sent a few thousand pounds.

The butter made in Denmark is held in high esteem on account of its keeping qualities. How it is made is described in a recent number of the *Milch Zeitung*, the method given being that followed at one of the largest factories in Denmark, as follows:

The special aim at this factory is the production of the finest quality of sweet cream butter and a good, not too lean cheese. A large quantity of milk is worked up, fifty-five thousand pounds, for instance, in the week ending June 18. The cream from the first skimming, taken off after the milk has stood nine or ten hours, is used for sweet cream butter, one pound of such butter requiring 35.4 pounds of milk. From the cream of subsequent skimming a small quantity of sour cream butter is prepared, taking both kinds of butter together 31.2 pounds of milk are required for one pound of butter. To cool the milk as quickly as possible the tanks in which the milk vessels are to be set are first nearly filled with broken ice and a little water; the milk pails, of oval form and holding about 70 pounds each, are then forced down into thick ice pap. In forty-five minutes the milk falls from 86 to 68 degrees, and in thirty minutes more to 55 degrees. When skimmed the temperature of the milk is about [illegible] degrees.

The cream is heated to about 52 degrees preparatory to churning; in winter it is heated about 3 degrees higher; the same is done if the cows have been fed on old hay, or if there has been an unusually large proportion of beans and vetch in their rations. The churning occupies from twenty-seven to thirty minutes; no water is added during this operation, skimmed milk being used to rinse down the sides of the churn. The butter comes in small pellets like pin heads, and the churning is stopped at this point; the butter is gathered in a strainer and kneaded with the hands; salt is added at the rate of three-eighths of an ounce to the pound, and after more working with the hands the butter is made up into five-pound rolls and laid in an ice chest, where it remains an hour and a half and cools down to 52 degrees again, when it is finally kneaded with the butter worker. Kneading at first with the hands is preferred because, as it is claimed, the buttermilk is more completely worked out. The utmost cleanliness is maintained throughout the factory, and scrupulously careful attention is required to the details of the management of the cream and butter, under the immediate supervision of the skilled dairywoman who has the whole in charge. The product of the factory is in nearly all cases ranked as first class by the Copenhagen exporters, whose judgment in the matter is held in extraordinary respect.

A large amount of information as to dairy matters in foreign countries has been obtained through the consular service of the United States, which is serviceable in this connection. Other facts relating to management and methods employed in important dairy districts in foreign countries might be described, but I fear I have already exceeded the limits to which, in the consideration of the topics found on your programme, this paper is entitled, and I will not further trespass upon your time.

On motion, the Association adjourned to 7 P. M.

EVENING SESSION.

The Association was called to order at 7:15 P. M., and the session was opened by a song, "We Come Again to Greet You," by Prof. Quackenbush and his Glee Club.

Miss Kate Price, being introduced, read the following essay:

HOW MUCH ROOM IS THERE ON THE FARM?

BY MISS KATE PRICE.

Practically, one's estimation of the amount of room on a farm depends upon what kind of room one wants. An artist or naturalist might find ample room in one of the mountainous New England farms, and the poet's fancy have opportunity for exercise, though it is said there is hardly room for the sheep's noses while they are cropping the grass between the rocks. Such a farm would be the despair of any but a New England farmer while the Western farmer realizes his ideal of a farm (all clear room for agriculture) on the prairies, where the Eastern farmer would have to learn a new art. But either on the New England or prairie farm, one attached to society might feel lost in desolation.

If one might select a farm with as varied advantages as possible, say, if you please, a well-ordered dairy farm with a surface alike satisfactory as to scenery and grazing land, and situated near enough to the railroads to enable the farmer to reach the markets and social life of civilization, then there is room on the farm for artist, naturalist, poet, man of society, or the farmer who combines the tastes of all in his own person.

There is a great deal of room wanted for life in this day. Room in various directions for culture is demanded by all classes of people, to an extent it never was before. The great tendency seems to be to regard city or town life as desirable, and to think the farm has not room for the education and the tastes developing with advancing civilization. Certainly the perfection of polish and culture is only reached through the most intelligent, appreciative experience in both country and city life, but we have had admirable examples to prove that there is room for us on the farm for all the culture and refinement a man may gain in his own or other countries. Still, young America thinks there is not room enough on the farm for him. Probably few farmers would dispute him, or care to keep the typical young American. He would be anything but profitable to keep.

The misfortune of the young generation leaving the farm is very greatly and generally regretted. It doubtless is an old suggestion that the trouble is, farmers' sons and daughters are not taught to respect the farm as they ought; that they do not know how much room there is on it, and are not helped to develop its resources of education for themselves.

Of course, in years past, boys, cradled in hardships and reared in privation, have left the farm, developed educated men in mind, men fit to command, fit to govern, fit to serve the world gloriously, as many familiar names in American history testify. It is not to be supposed, however, that because the farm has produced men with such characters in all the poverty of pioneer life, that the way to make sure of the boys amounting to anything is to give them as hard and dry a life as can be got on the farm.

America has stuff to make men stout-hearted enough to endure any hardship, and with brains able for any emergency. None-the-less can America produce men of integrity and sense without the buffets of poverty and misfortune. And the farm is the place that ought to produce such men, they are needed now as much as they ever were. Nay it sometimes takes better material, in the Nation's building, to endure fair weather than stormy.

The younger generations know that civilization has traveled a mighty distance ahead for them, from where it was for their fathers. And if they cannot get enough of what seems their right on the farm, they must go where they can, and go they will, with a misapprehension of the farm and farm life, which is an equal injury to themselves and society. No where should civilization show forth the true dignity of her advance plainer than on the farm. While the city follows her advancing steps with dissipation and debasement of her opportunities, the country should seize and conserve her gifts in their purity. The farm has room for everything but the vices attendant upon civilization.

It is as a school-room that, perhaps, the farm is least worthily recognized. To send boys and girls away to colleges and boarding schools is not usually to help their appreciation of the farm, or to materially fit them to use its resources for education, or develop its grander possibilities as a home.

But to assist them to as much of an education on the farm, and from the farm, as possible. That is, to show them how much room there is on it, and to compel their respect. And, that is practical preparation for a practical life.

The farm is the natural kindergarten, where the little ones should learn order and cleanliness from nature, active intelligent labor from the insects, arithmetic from the flowers, the elements of geometry from natural objects and the musical joy of birds
Delightful, indeed, would be their lessons in geography from their native hills, and vales and streams, and none happier than the instructive hours of child-life spent in guiding little rills in channels, illustrating the mighty rivers of the earth or building the shapes of the continents with earth and stone and sand And this is practical geography, much more of an education than the inaminate pouring over a geographical paper, patchwork of red, green and yellow states

Children would always rather their play should mean something and nowhere is there room for it to mean more, educationally, than on the farm But the education capacity of the farm is not merely primary, there is not a branch of common-school studies that may not here be pursued, and with advantage to most of them, as well as to the health and happiness of the pupils.

The boy with a bent for engineering should be assisted to build his dams and bridges over the pretty turbulent brook in workmanlike shape and with regard to scientific principles, thus to learn how great engineering feats have been accomplished with rivers A brook illustrates the laws of currents the making of new and abandoning of old channels, the deposition of sediment, the formation of islands and even deltas, as well as a large stream.

It is to the natural sciences that the children will be indebted for the truest ideas of the value and nature of the farm

When through botany they have learned the variety and beauty of the plant-life supported by the farm, from the oaks to the mosses at their roots or the lichens on their trunks, when zoology has made them acquaintances of the woodchuck and his burrow on the hillside, the birds resting in the woods or meadows, the butterflies that flit across the path the myriads of beetles armored splendidly in bronze gold and purple, the hosts of exquisite microscopic creatures that populate every pool of stagnant water then have they some idea of the room nature has on the farm

And when the children have come to realize the geology of the farm when a boulder tells them a story of its journey with an iceberg of the glacial epoch, and the bits of coral and crinoid joints among the pebbles near it tell of life in tropic seas, when they have learned, too the unknown depth think down through the thousands of miles beneath their feet through strata clear to the mysterious heart of the earth—whether of molten rock of strange materials dense enough to make up the average computed by scientists—that is as if one had secured a sort of hold on the earth's axis itself in this wondrous journey with the earth But to come to read the the history of the service of the farm, to look through the centuries and follow the work of the frost in the fissures of the rocks as season by season it has rent the solid layers, to follow the delicate chemical action of the atmosphere in oxidation, and of water in dissolving out the cements and soluble portions until the result is soil—the clay from granite still retaining its quartz and mica in sand and scales, the pure clay of slate rocks the marl from limestone the sand from sandstone—then will they have some conception of the work nature has done on the farm

But that is not all The surface bears record, too of that epoch when the polar ice-cap was pulled low down over the face of the earth, as far as Ohio Illinois and Iowa Everywhere is to be found the drift or loose material transported by the ice

In the quieter geological ages, succeeding floods have at rare intervals shifted the soil, and water in gentle rains and streams has worn away and transported soil from one place, to be deposited and rearranged in another

The vegetation of unknown centuries of summers has enriched the surface with vegetable mould This too being disturbed and moved more or less in the ceaseless circulation of water even to the washing bare of hills, when deprived of protecting forest, down to the crude gravel and clay

This the history of the farm is a history surely fit for the home of man The inheritance of the farm, as a birth place is like a bit of right to the earth remaining from Eden.

But this is the farm that boys leave with the impression that there is room on it for only driving work, a struggle to get the ground planted in the spring, a fight with weeds and potato bugs through the summer a hot hard job of harvesting and weeks of tedious corn-husking in the fall with the endless circle of chores especially aggravated for winter Girls, too rebel at the drudgery they find on the farm, and escape, if possible, to the reeking factories, or nerve-exhausting school rooms.

But through all their lives I doubt if farm-bred boys or girls can ever forget some of the charms of the farm. I think springtime must bring memories of the dell, where the earliest flowers bloomed, and a vision of the deepest-tinted Hepaticas, the delicate Dicentras and ferns, and the handfuls of Violets gathered there, perhaps, accompanied with unconscious repining that the farm had no more room for them.

Why should it not have? When colleges are turning students out of their time-honored doors for study of nature, and prentice works in her laboratory, cannot some of the room on the farm be given to like culture? Even at the expense of time so valuable on the farm, even at the expense of hard-earned money, where could it be better spent? Money spent on the farm, cannot be squandered in the city If half the money, worse than uselessly expended in the city, could be used for the improvements of country roads, so that social life on the farm could be facilitated the world would be by far the better off. For their is room for the most social of homes on the farm, and a cultured hospitality attracts a cultured society.

It is not to be supposed, but that the farm would still have to spare some of her sons for the world's work There is no better place for a country's statesman, men of science, art and letters to be schooled, than on the farm. And the country could afford to pay liberally for the schooling.

No poets ever sang sweeter than those who first learned with the birds on the farm. The truest art is the product of the country It was the shephard boy Giotto who, taken from his flocks on the hill side to Florence overturned the ghastly Byzantine art, degraded to the last degree and founded the era of modern art on nature and beauty

The country is always the guardian of the city and creates and preserves while the city is undoing Men like trees grow stouter and better balanced singly and the farmer should compare with the city-bred man as the splendid oak lord of all the sun and room it can use compares with the spindling trees in the heart of the forest Above all the products of the farm sent to the world's marts incalculably more valuable than good grain fine fruits or sweet, pure milk and butter are women helpful healthy and true hearted, and men with nerves and sinews and brains country bred

And though lacking collegiate training or foreign polish above all gentlemen in true dignity stands the real country gentleman

Mr. George P. Lord, of Elgin, read the following paper:

ARE BUTTER AND CHEESE THE FULL MEASURE OF THE VALUE OF MILK?

Mr President

We are to consider whether all the valuable qualities of milk are utilized in the production of butter and cheese so that the market value of those products will represent the value of milk Since the introduction of the Factory System it has become more and more evident that dealers in milk are fixed in their determination to establish the market price of that article on the amount of dividends paid by the factories rather than on the intrinsic value of the milk

This then is a practical question and one worthy of our consideration It is our purpose to take the aggressive side of it We affirm that butter and cheese, which absorb only a portion of the valuable qualities of milk do not represent the full value of the milk; and we further affirm that there are valuable ingredients in milk which are not and which cannot be incorporated in either butter or cheese It is not our purpose to fix the actual value of what is left of the milk after the butter and cheese are taken from it We only propose to show that it has a value which has been recognized always and everywhere And here it is proper to state that there are values which can only be expressed by signs

The sowing of a field of grain is a sign that the farmer believes that it is worth cultivating When the farmer engages in stock growing it is evidence that he thinks it will pay If the custom of feeding a certain class of feed for the promotion of the growth of young stock is universal then the evidence is conclusive that such food is valuable for that purpose It will be admitted that the custom of feeding butter milk skim milk and whey to calves or pigs is universal with those who have been engaged in dairying in all the history of the past This being true the evidence is conclusive that what is left of the milk after the butter and cheese are taken from it has a value or in other words that the butter and cheese did not absorb all that was valuable in the milk

This custom of utilizing what is left of the milk after the butter and cheese are taken from it is so universal that it should be as conclusive evidence of value as we could have, had each farmer made a calculation and expressed the value in dollars and cents In one case it might be more definite and satisfactory but it could not be more convincing It may be objected that this statement does not show the value of what is left of the milk after the butter and cheese are taken from it that if there is any value that value should be fixed so that all may know how to make it available It is proper therefore to consider the value that may be realized from what there is left of milk after the butter and cheese are taken from it

Speaking of whey Mr X A Willard says It should by no means be allowed to run to waste that it is a valuable food for pigs It has been stated by those who are authority on dairy matters that the whey of full cream cheese from 20 000 pounds of milk will produce 1 250 pounds of pork and the whey from that quantity of milk after the butter and cheese are taken from it will produce 500 pounds of pork This being true every farmer producing ten cans of milk daily who has it manufactured into butter and cheese is entitled to an amount of whey that would produce 500 pounds of pork per month or 6 000 pounds a year and if sold at $5 per hundred pounds would amount to $300 The farmer taking the same quantity of milk to a factory to be made into full cream cheese would be entitled to whey sufficient to produce 1 250 pounds of pork per month or 15 000 pounds per year which at $5 per hundred would bring $750 The butter milk and skim milk from the same quantity of milk used for making butter would produce not less than 1 800 pounds of pork per month which at $5 per hundred would amount to $90 per month This being true it will be admitted that the manufacturer should scrupulously divide the skim milk butter milk and whey among his patrons so that each should have his just proportion of the value of his milk

If we desire to be more fully impressed with the food value of what is left of the milk after the butter and cheese are taken from it we would say that so used it adds more every year to the cash value of the products of the country than is produced from the milk in any other way (the butter and cheese only excepted) and we challenge any one to show to the contrary If our premises are true and our conclusions just then all must admit that butter and cheese do not represent the full value of the milk and that all attempts to make those products the standard for the market price of milk are unfair and unjust

We come now to consider the proposition that there are valuable ingredients in milk which can not be incorporated in either butter or cheese Analysis shows that good milk is composed of about 87½ parts water, 4 parts fat, 4 parts caseine 4 parts sugar of milk and a small quantity of mineral matter, or bone-producing material. Butter contains 85 per cent. fat; ½ of 1 per cent. caseine; ¾ of 1 per cent. milk sugar; 13¾ per cent. water, and a small quantity of mineral matter.

Full-cream cheese contains about 35.55 per cent water; 31.63 per cent. butter; 28.78 per cent. caseine; 1.08 per cent. lactic acid from milk sugar; 2.94 per cent. mineral matter.

Cheese, from partially skimmed milk, contains about 35.65 per cent of water, 26.27 per cent of butter; 31.12 per cent. of caseine; 3.01 per cent. lactic acid from milk sugar, 3.95 per cent. of mineral matter.

Skim cheese will analyse about as follows 38.91 per cent water, 25.15 per cent butter, 29.37 per cent. caseine; 3.51 per cent. lactic acid from milk sugar, 3.06 per cent mineral matter.

It is evident that there are some of the valuable ingredients left, either in the butter-milk, skim-milk or whey Let us therefore pursue our investigation, and we shall find that the butter-milk and skimmed milk contains one-sixth of the butter, and nearly all the caseine and milk sugar that was in the milk, or nearly two-thirds of the valuable constituents of the milk. The whey from full-cream cheese contains 55 per cent., and that from skim cheese 39 per cent of the valuable ingredients that were in the milk Every analysis of whey that I have seen, shows that it contains about 3 per cent. of the butter, 25 to 30 per cent. of the caseine (that part of it which is albuminous in its nature), and nearly all the milk sugar that was in the milk Mr X. A. Willard says that "the albumen in the milk can not be coagulated by rennet, that it separates only at the boiling point of water, and then rises to the top in the form of a thick, white scum"

It may be objected that we have not shown that any of the ingredients of the milk which are left after the butter and cheese are extracted have any market value, that if they have, it should be made to appear In reply we say that milk sugar is an article of commerce, and that its value per pound is equal to the average price of butter and cheese combined, that any farmer would be a gainer who could exchange the butter and cheese for the milk sugar that is contained in his milk (returned to him in a marketable shape), provided he could sell it at the present market price He would then receive an average of $1.08 per can for his milk the year round Every farmer producing an average of ten cans of milk per day, produces a quantity of milk annually that contains about 10,000 pounds of milk sugar, which is worth $4,000 If he could add this amount to the value of the butter and cheese contained in that quantity of milk, he would find dairying quite attractive.

The milk sugar in the milk which is used annually in the United States in the manufacture of butter and cheese if saved and sold at the present market price would produce in five years an amount of money sufficient to pay the National debt Will any one be so kind as to tell us where the value of milk lies, whether in the butter and cheese or in that which is quite too frequently allowed to run to waste? It is objected to this showing that, whilst it is true that milk sugar is valuable and is an article of commerce, yet as a matter of fact we do not manufacture it in this country, that we have to deal with things as we find them, and that so long as farmers are willing to send their milk to the factories, and receive for it the dividends obtained from the sale of butter and cheese, they should not complain if the market price for milk is based on the value of these two products This is the logic of the trade and all will admit that the trade logic is very convincing and for that very reason it may be a question worthy of the consideration of dairy farmers, whether it would not be the part of wisdom for them to select their dairy stock with a view to the production of butter We may rest assured that the American people prefer butter to cheese It may be questioned whether we consume as much cheese now, per capita, as we formerly did whereas the demand for butter is increasing every year. Then again, we ought to have learned ere this, that England only takes our cheese when the price is ruinously low Advance the price to anything like a living profit, and the export demand ceases at once

Contrast the present with the past of the English market for cheese and you will find that, when their market was supplied with cheese of their own production, the price was 110 shillings with but slight variations for a period of ten years Now, when they are supplied with cheese of American production, the market price is but slightly above half what it formerly was and the fluctuations are such as to deter any but a born speculator from shipping cheese to an English market.

Were all the milk that is now used in this country for making cheese, used in the manufacture of butter, it would only increase our butter product about seven and one-half per cent., and this additional quantity would not produce a ripple in the butter market, whereas even a slight increase in our cheese product, would crush out what little of vitality there is in the market price of that article Charge this state of affairs to the quality of the cheese if you will, or account for it in any way you please, and yet we are confronted by the fact that the price of the best cheese in the market as compared with the price of butter is very low. A moment's observation will convince any one that fine butter has come to be regarded by the public as the finest condiment that can be used in the preparation of food, and no housewife would deem it prudent or wise to spoil the flavor of the food by the use of an inferior condiment. This will account for the price which our fine creamery butter is selling for on the Elgin Board of Trade.

Take another view of this subject. The dairymen in Wisconsin made "full cream cheese" a specialty, and prided themselves on the quality of their product Now they are in a quandary as to whether they have chosen wisely, whereas, the dairymen of Iowa, who made butter a specialty, and have taken the cream of the business, are jubilant over their success.

It is true that the Iowa dairymen have been highly favored, in that the Governor and all the leading men of that State, have been in active sympathy with their efforts. They have attended their Fairs and Conventions, and have used their personal efforts, and the influence of their official station, in giving promience and notability to the quality of their dairy product.

This is as it should be. And here I may be allowed to express surprise, that those in our own State who are are especially charged with the oversight of our agricultural industries, are rarely, if ever, found at our Dairymen's Convention. I know that it is not a fair, where articles are exhibited, that will attract public notice. It is simply a gathering of men, who are heartily enlisted in one department of our agricultural industries, and who meet to devise means for its fuller development, and one would naturally think that the members of our State Agricultural Board would deem it a pleasure, even though they did not regard it as an obligation, to be present at our annual gathering, so as to lend the influence of their official position in furthering our endeavors. I hail it as a happy omen, that our Governor has arranged to be present with us on this occasion

In behalf of this association, and of the dairymen of this State, I thank him for this manifestation of his interest in our welfare, and I may be permitted to express the hope that this interest may be so abiding that he will frequently favor us with his presence and his cheer

At the conclusion of Mr. Lord's paper Gov. Cullom was introduced to the audience, who received him with cheers and applause. After complimenting Miss Price on her able essay, and expressing himself pleased with Mr. Lord's paper, which had given him much light on the subject of dairy farming, he spoke as follows:

GOV. CULLOM'S SPEECH.

Mr President, Ladies and Gentlemen

I know of no subject which would seem more appropriate for me to talk about, holding the relation I do to the people, than the condition and affairs of our State There is no country in the world which possesses the natural resources essential to the necessities, comfort and hapiness of a people, equal to the United States Our prolific soil produces, under the hand of free, intelligent labor, a superabundance of the greatest variety of food, not only in sufficient quantities for ourselves, but sufficient to supply the wants of another nation as large as our own

The element of the soil, wonderfully incorporated in plants and flowers and trees, develops a result in grain and fruit and fibre, in this as in no other country on the globe. Our mountains yield us iron, lead, silver and gold in value of untold millions; we have our cotton States, our mineral States, our manurfacturing States and our agricultural States. Illinois, which we proudly call our home, belongs conspicuously to the latter class. Her fields of grain, her pastures and meadows, are the admiration, if not the envy of her sister States. Her citizens are employed in that industry, which, increasing and enlarging with intelligent labor, tends to build up and perpetuate their homes, and thus to foster that patriotic love of country upon which its peace and safety rest. To protect these homes and farms, and hand them down to their children as treasures of wealth, the cultivators the soil will give their lives, if need be, in defence of their country and its institutions.

In every sense Illinois is a new State. We have no grand historic past. As a State, we cannot go back to the days of our revolutionary struggle for national independence, only a few of us can follow our history back without finding ourselves in New York, New England, Kentucky, or across the water in the old world While this is so, the career of our State has been a proud one, and its growth steady and rapid. There is no page in the history of Illinois of which her sons and daughters may not justly feel proud; her people have been enterprising, intelligent, brave and patriotic.

Illinois was made a State in 1818—now nearly sixty-four years ago—with a population of 40,000. We have grown to three millions seventy-eight thousand seven hundred and sixty-nine in 1880. We have gained in population nearly 50,000 per annum since we became a State.

Goethe once said that " he did not know whether figures governed the world or not, bu he did know they showed how it was governed."

Napoleon said that "statistics mean keeping the exact account of a nation's affairs."

The area of our State, as you know, is 55,405 square miles. It is larger than Massachusetts, Vermont, New Hampshire, Connecticut, Rhode Island, Delaware and Maryland, all combined. In comparison with any of them it is an empire. Its surface is the most level of all the States, with perhaps two exceptions. While from year to year the business of our people is changing and becoming more and more diversified, yet the foundation of the wealth of Illinois is our rich, productive soil. The pioneers of this State, all honor to them, were a noble set of men. They were hardy and temperate. They came with their families to the southern portion of our State and settled, generally near a stream or spring, and in or near the woods For years the settlers in the State seemed afraid of the prairies, and if a man ventured out into the prairie to open a farm, his neighbors on the creeks and clearings thought he was crazy—they said the green fly would eat him up. Usually the first thing to be done after erecting a log cabin, was to clear a piece of land for tobacco, another for cotton, and finally a piece for corn. They were about all from the southern States. Game was plenty, and they did not find it necessary to work very hard to get a living—their wants were few, and the country was so generous in unfenced pastures for horses and cattle, and in mast for hogs, and wild fruit for man, that to procure subsistence was but a holiday pastime.

All this has changed—the broad, open prairies are changed into rich fields, bearing grain and grass—the free pastures are gone, and you provide for your cows and other stock in your own fields.

Illinois according to the census of 1880 produced more corn wheat rye and oats than any other State in the Union In comparing the productions of Illinois with those of the United States we have reason to congratulate ourselves that we live in a State that produces such a large proportion of the entire cereal crop of the country

The census figures are as follows

Corn in the United States	1 754 861 535
Corn in Illinois	327 796 895
Wheat in the United States	459 591 505
Wheat in Illinois	51 136 455
Oats in the United States	407 970 712
Oats in Illinois	63 206 250
Rye in the United States	19 863 032
Rye in Illinois	3 121 682
Barley in the United States	44 149 479
Barley in Illinois	1 220 693

These figures show that Illinois produces about 18 per cent of the entire corn crop 11 per cent of the wheat 15 per cent of the oats and rye and 3 per cent of the barley which is certainly a creditable showing

This State also raises more horses and hogs than any other State and there are but three States which exceed ours in number of cattle—Texas Missouri and Iowa have more The number of horses in this State according to reports is 918 909 cattle 2 045 366 tons of hay 3 484 242 valued at $21 184 087

The occasion of this Convention is to consider the interests of the dairy business in this State and country This is comparatively a new interest in the west and yet it has developed into great proportions There is no branch of agriculture which has received more thought or in which more skill is required than in dairying The dairyman has learned how to extract the cream from the milk almost immediately and I am informed that you have even invented machines for milking I fear the days of the maiden with the milk pail are over and we can no longer sing—

There neither slowly nor in haste
One hand upon her slender waist
The other lifted to her pail
And all the while she milked and milked
The grave cow heavy laden

The progress you have made in this branch of industry is owing largely to your admirable cooperative system in the manufacture of butter and cheese

Your conventions have had much to do with the prominence your industry has attained of late years Your discussions enlighten and stimulate investigation and encourage all to secure the best results in breeding better dairy stock obtaining the most approved apparatus for manufacturing and adopting the most profitable methods for marketing your products

Butter and cheese are largely manufactured in factories where the most skillful experts are employed and where all the conditions necessary to secure the best quality of butter and cheese are carefully considered

A successful dairyman must be a good farmer a prompt systematic business man and above all things honest and I might say temperate in the use of water not for drinking purposes but as an article for reducing the quality of milk The best and most successful managers of creameries and cheese factories use unadulterated milk for making butter and cheese and the consumer I am sure prefers the pure article for drinking and for coffee and culinary purposes

From returns to the Agricultural Department of the State in 1880 I find the following statistics relating to the dairy interest in this State

Number of cows kept in 1880	613 738
Pounds of butter sold	24 553 449
Pounds of cheese sold	6 187 680

The production of butter and cheese is yearly growing larger I see by the papers that from June 18th to August 27th of this year the receipts of cheese at New York city alone were 1 256 000 boxes and that the total production in the United States is estimated at over one billion pounds

The reports to Congress show that the exports of butter in 1870 were valued at the small sum of $592 229 and of cheese at $8 881 934 while in 1880 these exports were for butter $6-690 687 and for cheese $12 171 720 an increase of more than 100 per cent in ten years

We have laws in our State the purpose of which is to protect pure butter and cheese against fraudulent butter and cheese placed on the market but they don t seem to be enforced by the local authorities They ought to be enforced or repealed The wicked practice of adulterating butter and cheese and other articles of food and palming them off upon the people as the pure article should be broken up

If further legislation is found to be necessary let us have it Honest butter and cheese and sugars and syrups and spices cannot keep their places in the market if they are to be placed in competition with articles of the same name and appearance but which are spurious It is well known that Illinois leads the other States in meat packing in the lumber traffic malt and distilled liquors the manufactures of agricultural implements and in the number of miles of railroad while the value of our coal product is exceeded only by two other States

I noticed a few days ago that our worthy Commissioner of Internal Revenue reports' that Illinois pays an internal revenue tax of nearly twenty six millions of dollars for 1881' which is six and a half millions more than is paid by any other State and which is one-fifth of the whole amount collected in the United States while our population is only about one sixteenth The industries of any country in order to be profitable must be diversified and in our State they are becoming more and more so The time is coming soon, when our State will not be so distinctively an agricultural State in contrast with other interest It will not be long before it will be a great manufacturing State Our soil is rich almost beyond comparison and because we have the soil and can produce the food in abundance your towns will become manufacturing towns and your beautiful streams in this portion of the State will be utilized and great mechanical industries will spring up all over this country and you will have a market at your doors for your products and your lands will in a short time be doubled in value

The farmer's interests are closely identified with all the great business interests of the country The people of this great country cannot all engage in the same business and expect to prosper They cannot all raise corn or butter and find a market for either The world is made up of all sorts of people and they must carry forward all sorts of honest business if they would prosper and be happy and the man engaged in any one kind of business is in some degree interested in every other We have in this country the cotton the wool the iron the copper and lead and in fact all the raw material in the greatest abundance out of which to manufacture every article of use known to human life and it is the policy of this country to encourage our home industries By so doing we develop our own resources and create a home market for our surplus products Protection to American industry does not mean protection to the mechanic and artisan alone or to the capitalist engaged in manufacturing but it means protection to the common laborer in fair wages and to the agriculturist by giving him a home demand for his products But diversified labor and pursuits will not enable us to reach our highest possible plane of prosperity unless our facilities for transportation and the extension of our commercial relations are also protected It is now a conceded fact in the discussion of the transportation question that water navigation in a measure regulates and controls the rates for carrying freights and therefore it is our duty to protect and improve our rivers lakes and canals They are of late claiming the attention of our best business men and ablest statesmen

The enlargement of the Illinois and Michigan canal into a ship canal and the improvement of the Illinois river and the building what is known as the Hennepin canal between and connecting the two rivers all should claim the attention of the public as of the highest importance The work is national in its character uniting the waters leading to the gulf with the lakes The work of enlarging the canal and building the one between the Mississippi and Illinois rivers should be undertaken and carried out by the national government The present canal now belongs to the State In my message to the Legislature last winter I called the attention of the people to the question of enlarging the canal and advised that the Legislature in pursuance of the constitution should submit the question to the people whether the canal should be turned over to the national government on conditions The Legislature failed however to provide for the submission I have no question but that the government will make it a ship canal if we will permit it The business of the country will force the building of the Hennepin canal and the enlargement of the present one The commerce of the country not only of Illinois alone demands that these works shall be begun and that soon When Congress gets to understand the facts thoroughly the work will begin

Of the millions of bushels of grain raised in the United States much the larger portion of it is raised in these Western and Northwestern States The profit of raising depends on the rate of freight very largely We know that for the past year it has cost as much to carry grain say 150 or 200 miles inland to the lake by rail as from the lake ports to the seaboard The amount saved to the people by the building of the Hennepin canal and the enlargement of the Michigan canal would very soon pay for its construction This great improvement commends itself to the agriculturist and the manufacturer and we of the Northwest must insist upon its being done without delay by the general government I expect to see the day not far in the future when ships laden with the products of the Northwest will pass through this proposed canal from the Mississippi river to the lakes The railroad interest in our State is an immense one —we have 8 314 miles of road in the State which have cost in their construction not less than three hundred and twenty millions of dollars They earn about fifty millions of dollars per annum and their expenses are about thirty millions per annum They employ in the State forty thousand men to whom they pay twenty millions of dollars a year Our State is more thoroughly supplied with railroads than any other perhaps and our level rich soil makes it necessary in the interest of the people that we should be well supplied as in much of the year it is difficult to market our products by hauling over the common wagon roads The amount of capital invested the number of men employed and the value of the railroads to all the people and to all business claim for them a fair recognition and fair treatment at the hands of the people We depend mainly upon railroads to take our products to market The farmer in these days of fast living would have a sorry time of it without the railroad While they are a power for good they may become oppressive and hence the reason why the State lays its hands upon them and says to those in control You may operate your roads for reasonable charges and profits but you shall not extort and become a power for oppression We have had quite a struggle in this State and country on the question of the power of the State to regulate railroads In the days when we had no railroads and men wanted charters from our Legislatures to build roads they got them with any provision they desired to write in the bills The time came when the people thought they were oppressive —the struggle as to the question of the State regulating them began The question got into our Constitutional Convention then into the Legislature then into the courts and step by step we have been settling the relative rights of the people and the roads until to day our Railroad Commissioners make and publish new schedules of rates under the law and for the first time in our history the leading roads without delay make their schedules to conform to the rates fixed by the board Great progress has been made in the right direction. I hope, as these questions pass by as settled, over which the people and roads have differed, greater harmony of interest will prevail between the producers and the common carriers of the country.

It is, perhaps not out of place for me to say a word about the present financial condition and the expenditures of our State. It no longer owes a bonded debt A few of its bonds are still out, but they are not paid because they are not presented. They have been called for, and the interest stopped

Since the payment of the debt, the amount received from the Central railroad—7 per cent of its gross earnings—goes into the State Treasury to be used in payment of current expenses of the State government The last Legislature appropriated $6,140,272; for the fiscal years 1881 and 1882, which were for the following purposes

At the very outset $2,175,000 of the $6,000,000 go to the support of the common schools and normal schools of the State. Next come the charitable institutions—nine of them—four insane hospitals, one mute, one blind, one feeble-minded, one eye and ear infirmary, and one soldiers' orphans' home. The legislature appropriated for their current expenses and repairs, etc., $1,643,522—this includes the amount for carrying on the construction of the Kankakee hospital. The average number of persons in these institutions, including those in the reform school, is 3,135 —the cost of taking care of these persons, per capita, has been gradually reduced from year to year. In 1876 the cost per capita was $237 16 per annum, this year it is $209.21--leaving out Kankakee, where there are but few patients, it has been reduced to $201.28. There has been a strong effort by all the local boards and by the Board of Charities to reduce the expense, from year to year, of taking care of the unfortunates of the State, so that burdens would not bear so heavily upon the tax-payers, and so that the State could come nearer than it yet has to taking care of all the unfortunates, instead of less than half.

From information which I deem reliable, there are over 90,000 insane persons in the United States, and over six thousand in Illinois. There are about 1,500 mutes and 1,000 blind persons in the State; this being so, the State is yet to determine what can and shall be done in reference to this great number of persons not provided for by the State, but I will not stop to discuss that question now.

I feel sure these institutions are honestly and economically managed For six years there has not been a dollar of deficit in any one of them, but they have had a substantial surplus saved of the money appropriated.

The legislature appropriated $440,340 for the penitentiaries and the reform school. Much the larger part of this was for the construction of the Chester penitentiary and for the subsistence of the convicts while engaged in construction, a part of it for land and improvements of the Joliet prison, and a part for subsistence and repairs of the reform school at Pontiac.

Three hundred and eighty-two thousand three hundred and sixty-six dollars was appropriated by the Legislature for the legislative department, and the sum of $594,150 for the judiciary. The sum mainly goes to the judges and State's attorneys in the several counties—over $40,000 a year is paid to the State's attorneys. $438,882 was appropriated for the executive department proper which includes all the State officers —Governor, Secretary of State, Auditor, Treasurer, Superintendent of Schools, Attorney General, and all the expenses attending the administration of the duties of their offices $142,475 goes to the Illinois National Guard, $51,600 to the Agricultural, Horticultural and Piscicultural Boards; $98,600 to the Canal and Railroad Commissioners—$60,000 of the amount to be used by the Canal Board only on a contingency, which during the last two years did not happen, and the money was not touched. $24,000 to the Sanitary Board These, with a small appropriation for the Normal schools, I believe make up the $6,140,000 appropriated for the two years by the last Legislature. Nearly five millions of this sum, as you will see, go to the schools, the charitable and penal institutions and the judiciary of the State.

I have thought it proper to refer to these matters, connected with the affairs of our State, because you, as tax-paying citizens, have a right to know and desire to know what becomes of your money after the tax collector gathers it in.

But I will not detain you longer. There are many facts connected with the history of our State and its affairs which I would like to talk about if I had time The people of this country are passing through an era of almost unparalleled prosperity. The country has never been more prosperous as a whole. By wise administration of affairs, and by wisdom gathered from the years of trial through which the people passed in the period of our financial and business depression, we may continue to go forward in increasing prosperity.

When Gov. Cullom concluded his speech, he stepped to the floor of the hall, where he was introduced personally to the audience, and, shaking hands with each one who was presented to him; had a word of cheer to offer each of them.

The convention then adjourned to 9 o'clock.

FRIDAY MORNING.

The convention assembled at 9 o'clock, and a score or more of members accepted the cordial invitation of E. J. Oatman to visit his farm and view the silo and ensilage, conveyances being furnished by the farmers and others of Dundee. After a drive of a mile and a half, the farm of the Messrs. Oatman was reached, and the convention proceeded to inspect the silo, which is a very large one, and which was built the past season. The ensilage was in a fine state of preservation, and to show how the cows relish this kind of feed a dozen cows or more were stabled and small ration placed before each of them. The gentle kine hesitated not, but with a relish soon devoured the feed, and from their looks plainly asked for more. The Oatmans have thus far made a success of their experiment, and are highly elated with the results. Should any dairyman desire to construct a silo, it would pay him to visit this one and learn the *modus operandi.* The members of the convention expressed themselves highly gratified with their visit. The convention returned to the hall at 11 A. M., and the programme was resumed as follows:

Mr. D. C. Adams, of Dundee, read the following paper:

HOW TO CONDUCT A DAIRY FARM.

The average dairy farm consists, perhaps, of from two to two hundred and fifty acres. A farm of this size can, I think, be managed to better advantage, and will yield a larger return for the labor bestowed and capital invested, than would a greater or less number of acres. Such a farm will, if mostly available and well managed, keep from sixty to seventy cows, which is as many as should be kept in one herd. Good, well arranged, convenient barns, of sufficient capacity to accommodate the whole stock, are indispensable to success in dairying.

It is worse than folly to attempt to get along with cheap board stables, or inferior, inconvenient barns The lack of money to build is not sufficient excuse Better be in debt for what they will cost than be without them. The economy of food and labor will pay the interest two-fold. The buildings should be substantially made, and so arranged as to economize labor to the utmost.

The most improved, modern barn for the dairy is built with high, well-lighted basement, of stone or brick mason-work, with drive-way through from end to end, so the manure can be loaded directly on the wagon and taken to the field. It should be built with, at least, twenty-foot posts above the basement By so doing, sufficient room will be provided for storing nearly, if not all, the fodder required for wintering the stock. On the floor above the basement considerable space must be allotted for cutting stalks, storing feed, etc., and should be so arranged that the feed may be drawn through scuttle holes to places convenient for feeding. One large barn is preferable to more smaller ones, it costs less in proportion to its capacity, and will be found more convenient.

Special care must be taken in preparing the milk for the market or factory. The pails, strainers and cans must be thoroughly cleansed and aired some time before using. Wooden pails should never be used The milk must be well cooled and scrupulously clean. Use a wire and cloth strainer compined, and rinse it off with clean water frequently while milking, but you must not depend too much upon the strainer. If dirt is allowed to get in the milk it cannot be wholly taken out. Do not allow your cows to wallow in mud, or lie in manure.

Sloughs should be drained by tiling or ditching, and if the latter, the ditches should be covered or fenced. The stable must be kept well cleaned and supplied with bedding. The refuse of cut stalks answer well for this purpose, as they rapidly absorb the manure, so the barn will be comparatively dry, and the liquid, which would otherwise be lost, will go to the fields with the manure. If these precautions are observed your cows will be kept clean, and with proper care in milking you will have clean milk.

The milk house should be adjoining or near the barn, and built with due regard to keeping out heat and frost, and in a cooling tank with an abundant supply of water, which, in temperature, should not be much above fifty degrees Fahrenheit. If the water should not be so cold, it is well to lay in a stock of ice, to be used as needed. The tank must be large enough so the cans may stand at least an inch from each other and the sides of the tank, and they should stand on slats, fastened to the bottom of the tank, so the water can circulate freely around and under them. The tank must have a waste pipe on a level with the neck of the cans. The water should be kept in motion, at least until the milk is thoroughly cold. If you are not so fortunate as to have a spring of running water, leave the faucet of your reservoir open so as to produce a current. The cans should be put in the tank as fast as they are filled and not allowed to stand in the barn till the milking is completed If the animal heat is not taken out decomposition soon commences and if the milk does not become prematurely sour, its quality will be impaired About an hour will be required to cool an eight-gallon can of milk

Cows should at all times have access to pure spring or well water and should never be allowed to drink from stagnant pools or any water containing impurities

The cow may be termed a laboratory, where milk is produced from the food she eats and the water she drinks and she cannot be expected to turn out a good article unless supplied with wholesome food and good water Insist on your cows having gentle treatment, and do not run them while going to and from the pasture Never misuse the boot or milking stool in attempting to reform a refractory cow Nine times out of ten the remedy will make matters worse If she cannot be overcome by kindness or strategy, she is worth more for the butcher than the dairy.

Cows should have daily some out-of-door exercise when the weather will permit, but must never be exposed to severe storms or very cold weather The venerable Mrs Partington never could see why hens wouldn't lay when eggs were scarce To avoid a like perplexity arrange your dairy so as to have a good share of fresh milkers during the fall months, when there is always a good demand for milk

We cut our corn stalks, and feed liberally throwing out the coarser part for bedding, feed sparingly of hay twice per day, also corn meal and bran mixed from one to six quarts according to the condition of the cow and the amount of milk she is giving When oats are plenty and not too high priced we grind them with corn and mix with them.

The corn crop is justly entitled to the highest rank as regards its value to the dairyman While the corn is worth more for feeding than any other crop in proportion to the cost of production the stalks if properly secured and utilized make excellent fodder for the cow and will go nearly as far as the same number of acres of hay So in view of its importance, special attention should be given to its cultivation Great care must be taken in the selection of seed Always select the choicest well dented ears, it should be gathered while the husks are turning, or before the early frosts and put in a dry, airy place so it will become thoroughly dried before the cold weather comes on Manure if possible the whole field intended for corn spread evenly and pulverize it by the use of a heavy brush, plow and harrow well and plant from the 1st to the 25th of May We prefer to plant the early part of the month so that the cultivating may be through in time for haying, and it is less liable to be injured by early frosts in the fall

After planting use the harrow until the corn begins to show above the ground Commence with the cultivator as soon as the corn will stand it and go through it at least as often as once a week till it is grown so as to well shade the ground When the crop is matured and before the stalks are dried it should be cut and shocked Commence husking as soon as the corn is cured sufficiently to crib The stalks should be put in the barn, or stacked as the husking progresses Some leave them standing in the field through the fall rains and even into winter In this way they often become bleached and rotted until they are comparatively worthless

From five to ten acres of thick drilled corn will generally prove a good investment An immense amount can be raised to the acre, and it is as good as hay for winter feeding, and in case the pasture should fail from protracted drouth, it can be cut and fed green In this way the possibility of a famine may with reasonable certainty be averted

Raise pumpkins with corn They cost but little, and a couple of wagon loads per day through the fall will relieve the pasture and keep the stock in fine condition

Rye is undoubtedly the best grain with which to sow timothy ond clover, but as it is not sown to any extent on dairy farms, the seeding is generally done with oats We sow three pounds of clover with ten of timothy to the acre If a larger proportion of clover is used, on strong ground it will be likely to overcome the timothy so that only a crop of clover will be raised the first year at least We have had quite as good success by mixing the seed with the oats and sowing with a broad-cast seeder New seeding, having a good share of clover should be cut the last days of June and the first part of July and all grass should be cut before the stalk becomes woody The meadow should be broken up after taking off the third or fourth crop, the sod then readily yields to the harrow, and a good crop of corn is most sure to follow

I have now only considered the farm as a financial investment and I have given a few scattered thoughts as to how, in my judgment, it should be managed to produce the best results There is an endless variety of details which can not be written, connected with carrying on the dairy farm, and on their proper execution success or failure will very much depend These must call into action the best judgment of the practical farmer Comparatively few fully appreciate the value of their farms as based on the net income they will yield Every farmer should keep a debit and credit account with his farm showing the whole income and every expense incurred in carrying it on and if he is thorough and efficient I am safe in saying he will think well of his investment, and will not be likely to barter it away for refuse stocks of merchandise or something else equally fleeting. He will then be able to compare accounts from year to year and note the progress he is making.

Do not aspire to be the owner of too much land The fewer Dalrymples we have the better for the country As a rule farmers should own their farms, and cultivate what they own If you should go out in search of a model farm, you will be likely to find it in the possession of its owner, and he a man of intelligence, taste and refinement, and that he values it not only for the income it will yield him in dollars and cents, but also for the home it makes for himself and family, and as such he is trying to beautify and make it attractive It is for his interest to make improvements as permanent as possible, while the tenant can only afford to improve for to-day.

The gifted Ingersoll said, when speaking on this subject: "Renters can hardly be called farmers. There can be no such thing in the highest sense as a home unless you own it. There must be an incentive to plant trees, to beautify the grounds, to preserve and improve. Home makes patriots. He who has sat by his own fireside with wife and children will defend it. When he hears the word country pronounced he thinks of his home. Few men have been patriotic enough to shoulder a musket in defense of a boarding-house."

The farmer has been termed the bone and sinew of the land. Then "quit you like men." Let your word be as good as your note. Avoid croaking. Do not worry through fear of being parched by drouth or flooded by rain.

Discharge your duty manfully, and then let your responsibility end. If in debt, get out as soon as you possibly can. "A mortgage casts a shadow on the sunniest field." Take a daily paper for your own benefit and that of your family; keep a conscience void of offense toward God and man, and you deserve prosperity.

Question—What is the reason for 250 acres being better than a larger farm?

Adams—Sixty or seventy cows are as large a number as can well be kept together, and such a sized farm is large enough to profitably employ the amount of help needed to care for the cows.

This was followed by a discussion on the size and manner of constructing a model barn.

On motion of R. P. McGlincy a committee of three was appointed to examine and report upon such dairy utensils as had been placed on exhibition.

The Chair appointed D. C. Adams, Benj. Cox and D. S. Jencks as such committee.

C. H. Larkin, from the Legislative committee, made a verbal report, setting forth what the committee had done since the last meeting, and on motion the report was accepted.

The Committee on Nominations reported the following officers for 1882, and on motion the report was adopted:

President, Dr. Joseph Tefft, Elgin; Vice-Presidents, C. C. Buell, Rock Falls; S. W. Kingsley, Barrington; C. H. Larkin, Elgin; S. K. Bartholomew, Marengo; I. Boies, Genoa; H. C. Edwards, Dundee; I. H. Wanzer, Elgin; L. B. Parsons, Flora; H. W. Meade, Hebron; N. Eldred, Gilman. Secretary, R. P. McGlincy, Elgin; Treasurer, R. M. Patrick, Marengo.

The Committee on Obituary reported the following, which was unanimously adopted:

WHEREAS, It has pleased our common Father to remove by death, since our last meeting, one of our number, J. R. McLean, we feel it a melancholy pleasure to offer a tribute to his memory by the passage of the following resolution:

Resolved, That by the death of Ex-President J. R. McLean, the Illinois Dairy Association has lost one of its most efficient and enthusiastic members, and a man, who, in all his relations to the body, was a courteous and intelligent associate, a man of sterling worth, who, by his genial nature, added much to the interest of our meetings, and by his progressive spirit contributed largely to the material welfare of the dairy interest, and we recommend that this action be spread on the record.

J. H BROOMELL,
C. H. LARKIN,
H. C. EDWARDS.

The Finance committee reported having received $72.25.

On motion, the convention adjourned to 1 P. M.

AFTERNOON SESSION.

The convention met at 1 P. M.

R. P. McGlincy, Secretary of the Elgin Board of Trade, presented the following figures, showing the sales of the Board from January 1, to December 31, 1881:

The year 1881 opened with a very much larger amount of cheese in the hands of factorymen than they held at the close, with prices rather lower for the season. At the first meeting in January, sales of cheese were made at 7½@8 cents, with a probable average of 7¼ cents per pound.

The price of butter held steadily through the month at 32 cents, with light regular sales, apparently indicating that the demand was not very good. One reason for this, may be found in the fact that so much fraudulent stuff was being put upon the market elsewhere that the sales of genuine butter were restricted.

Cheese took an upward tendency about the middle of the month, and so continued until the 10th of May, when prices again receded. During a portion of that time cheese frequently sold at 10 and 11 cents. Butter continued steady at 32 for a number of weeks, until April 19th, when it dropped to 30, and then its course was downward until June 7th, when it sold at 18½@19. This was the lowest point reached by butter during the year. It then again advanced slowly for a time, and then again rapidly, until December 13th, when it reached 45 cents, which was the highest price attained on the Board for many years. After that date the price receded until the close of the year, when it rested at 40 to 42 cents.

There are no regular sales of cheese reported during the meetings held May 17th, May 24th, May 31st, and June 7th. On the 14th of June cheese sold at 5@8 cents, and from that date it advanced in price until September 13th, when 1,685 boxes were sold at 12 to 12½ cents. This was the highest price reached by cheese during the year, with the exception of one sale of 50 boxes full creams at 13 cents, October 4th.

From the table published below, it will be seen that the total transactions are far in excess of what they ever were before in any one year, and in number of boxes of cheese and aggregate value of butter and cheese, are greatly in excess of the sales of the Utica, New York, for the year 1881, or of the Little Falls Board for the same period. At the former, the sales were 240,476 boxes, aggregating 14,444,760 pounds, and sold for $1,615,184.17. At Little Falls, the sales were 253,025 boxes, aggregating 15,181,500 pounds, and sold for $1,653,766.34. It will be observed that the cheese sold on the Elgin Board exceeded either of the above in boxes, but fell short 2 to 3,000,000 of pounds.

The acompanying table shows the sales by months on the Board:

Months.	Boxes Cheese sold.	Pounds.	Av. Price.	Pounds of Butter sold.	Av Price	Total Sales.
January	32,992	1,371,188	8¾	278,473	32	$189,976 41
February	21,724	817,457	10	249,822	32½	162,469 14
March	22,765	914,920	9 1-5	374,680	32 2-5	227,493.22
April	19,007	667,653	8⅓	259,371	30	149,641.81
May	21,413	809,348	8	304,800	22 1-5	139,997.00
June	29,105	1,280,119	6⅛	407,683	20	172,998.32
July	18,625	85,329	7	262,597	22	111 164 14
August	26,417	1,096,698	9	390,961	27	194,557.79
September	24,082	872,448	11¾	266,297	33	198,947 28
October	25 037	961,086	10¾	379,307	34¾	239,427.40
November	12,844	480,622	9 1-5	264,559	37 2-5	143,049.75
December	33,673	1,254,657	8½	430,079	42	289,877.78
Total	287,664	11,327,525	9	3,868,629	30⅓	$2,219,600.04

It will be seen by the above, that nearly two and a quarter millions of dollars were distributed among the milk producers of this section during the year which, to say the least, is an exceedingly handsome sum, and far more than all other branches of agriculture have paid for the same time. Besides, the money is distributed monthly, thus giving the farmers and others who are interested in this industry, their funds at regular intervals. If we would add to this the amount paid for milk at the Elgin Condensing Factory, and for milk shipped to Chicago from points tributary to the Elgin Board of Trade, as well as the total product of all the factories represented on the Board, we would find that the amount of money paid for milk, butter and cheese, would aggregate fully 5,000,000 of dollars.

By comparison we find that the average price of cheese through the year has been 9 cents, and butter 30⅓ cents. The highest price paid for cheese at Utica, New York, was 13⅝ cents; at Little Falls, 13 cents; at Elgin, 13 cents. In both cases the cheese was full cream. The lowest price paid at Utica was 8½; at Little Falls, 7; at Elgin, 5; and the Elgin product was part skims, while the other were full creams. These comparisons are useful in that they show that, while comparatively a small portion of Illinois is engaged in dairying, and that while a large portion of the milk from that section is used as an article of food in its natural condition, Illinois holds a proud rank as a butter and cheese producing State.

The programme was resumed, and the following question was discussed:

"Is it the Duty of the State Government to Foster and Encourage the Dairy Industry of Illinois?"

R. M. Patrick gave some very good reasons why the State should aid the dairymen, and among others was the fact that the buisness was largely experimental; that is, there were modes advocated, and the idea was to discover which was the best. The aid rendered by the State would be repaid many times, if the experiments could be made, and they should prove successful.

Mr. C. H. Larkin then read the following paper:

WHAT LEGISLATION, IF ANY, DOES THE DAIRY INTEREST REQUIRE?

In discussing this topic, it is proposed briefly to call attention to a few reasons why legislation should be invoked in the interest of this industry. To begin with, this proposition is made: That whatever lies at the base of general wealth and prosperity is a proper subject of legislation, and especially is this true regarding those interests that are largely experimental. Proof of this is unnecessary, as it is believed no one will deny. Again, it is assured that all will admit that the most valuable interests materially considered, are those which produce—those that win food, raiment or wealth from land or sea.

Whatever feeds the people makes all other trades or callings possible. That the dairy interest occupies a conspicuous place among these industries is evidenced by the fact that all over the country dairy fairs and dairy conventions are held, and not only attract the attention of men practically engaged in it, but those from other walks in life, find time and inclination to attend. Not long ago a gathering of a few active dairymen was sneered at and deridingly called "A Chalk and Water Convention." Not so now Our public servants whom we have helped to place in positions of trust and responsibility, find the claims of this industry cannot be ignored. And even politicians and office-seekers have been known to be attracted by the winsomness of the cow, dairy-maid, or something else, to come to our gatherings, go home with us and interest themselves in all the belongings of the cow-barn and creamery, until the whole business smacks of old-time poetry.

The magnitude of this interest is a very cogent reason why it should receive attention at the hands of our legislature. The following will, I believe, fall below, rather than exceed the actual capital invested in this enterprise in this State, excluding the amount invested in distributing milk in cities; also, the no-inconsiderable sum in butter and cheese factories:

VALUE OF COWS, HORSES AND LANDS.

Cows, 1,000,000—$30 each.	$30,000,000
Horses, 75,000—$80 each.	6,000,000
Acres of land, 4,000,000—$30 per acre	120,000,000
Total value	$156,000,000
Add to this the	
Annual value of feed, say	$6,500,000
Labor	1,000,000
Loss on stock—5 per cent	1,800,000
Interest on total, at about 6 per cent.	9,360,000
Making in all	$258,400,000

This, too, without the legitimate items of insurance, repairs, taxes and value of team labor. I come now to say something suggested by the supplementary part of the proposition started with, to-wit That the whole business is largely experimental, and because it is so, should receive attention from the government. Every dairyman knows that we are in possession of very few bottom facts, and most of those obtained by long, imperfect and often expensive trials.

In the nature of things the individual dairyman can only follow a certain fixed routine learned from books or his fellow. He can not stop to analyze the milk of the various breeds of cows, and thus determine which is the most profitable for him to keep in view of the particular purpose for which he labors Neither can he tell how best to treat the various soils on his farm to make them produce the best forage and grain, or how to secure and use the same with reference to the law of equivalents The cause, cure and prevention of disease is to most of us a sealed book Hence, we have to support an army of "cow or hoss" doctors, that often know less of the trouble than we do ourselves Only a man or institution supported by the government, or immensely rich, can do this.

The commercial history of the common shrub, sumac, is a striking instance in point A few years ago the rural population of some states gained a scanty living by gathering and marketing the leaves of this shrub, but it was found to be inferior to the imported article A commissioner was appointed who, having his compensation secured, and having no other interest in the matter than that of the people, spent months in studying the roots, stalks and leaves of this shrub The outcome was very simple but worth thousands of times more than it cost He found that if gathered at a certain stage of growth they contained more value than the imported article

The United States Fish Commission furnishes another fine illustration of what can be done in this direction Composed of a body of purely scientific men, it has done a work of immense practical value—a work that no individual or trade could do. It made experiments It compared the known with the unknown, and directly the unknown is for the benefit of all Much of the work done by the commission seemed to the fishermen themselves as idle and useless "What is the use of dragging the sea for new worms and bugs?" "Of what use are these numerous bottles filled with crawling things?" ask they. But at last the dredge brings up a new fish from far down below the reach of longest fishing line, but one that proves good for the market and to eat

Scientific research and experiment must be pursued without regard to profit. To experiment is to ask questions of nature, not to seek gain. Only a government can afford to be scientific, and it is the duty of both State and National to pursue science and experiment for the people.

This is realized and acted on by several States Our own to a very limited and partial extent. Something is given to the State Horticural Society—$100, I believe, to each county "hoss trot." I urge again that dairying should receive attention from the government because it is a branch of agriculture, and agriculture has always been regarded as the base of all wealth and prosperity, and because it is essentially an experimental business. True, we have learned a great deal We no longer require our mothers, wives and sisters to work up the milk at home with dash churn and wash tub. But I assure you one thing, the goods they made were genuine.

They knew nothing of the use of oleomargarine or suine. No, no, Fellow Dairymen; and especially Gentlemen Manufacturers, don't flatter yourselves that because you can so adroitly manipulate "trichenous," and cholera hog-fat and diseased tallow, that none but an expert can detect it, that you know it all. There remains much yet to learn. Within a month a reliable gentleman told me that a member of his family, in cutting through a roll of butter that was made not a thousand miles from here, something obstructed the passage of the knife. On investigation it proved to be a pork rind. Manufacturers need to learn to be more careful, if nothing more.

I come now to speak more specifically as to what legislation we want, and here let me say, what perhaps I might have said in the outset, that the line of thought in this paper, thus far, and will continue to the end, is substantially the same as presented by the writer to a legislative committee at the last session of the Illinois Legislature. I was about to say that among the most important items of legislation required by the dairy interest is, in my opinion, the establishment of dairy stations.

The most satisfactory answers to questions pertaining to agriculture, in any of its departments, are the ones given by nature, and the most successful man is, as a rule, the one best able to ask questions of her. And what we ought to have is a place to ask questions. A place where the obscure and partly-known may be made clear and positive. A place where trained and careful men may study the laws and forces of nature that apply to our calling.

True, we have our National department, and many States have their State Boards of Agriculture, but while we are manufacturing and growing for millions beyond our own boundaries we have but few experimental stations of any kind, and as far as my knowledge extends, none of the kind indicated The old world is far in advance of us in this matter As early as 1852 one was established at Liepsic, and in 1879 there was in successful operation 123 stations of various kinds Some of the States are doing something in this direction, but very properly making a specialty of those things that belong to their more immediate locality. It is to be feared that while we are priding ourselves on being the 'pioneers' in the dairy business of the West we shall wake up bye and bye to the fact that our competitors on the Northwest have gained the lead Doubtless our institution at Champaign will suggest itself to many as being just the one to do the work desired. While it is not the province of this paper to criticize the workings of that institution it may not be out of place to say that any one looking into the matter will be likely to find very obvious reasons why, without very radical changes, it would fail of accomplishing the end sought

The institution desired is no convenient contrivance for some political favorite or broken-down hack but a place of honest hard work Of the details I have little to offer. Suffice it to say in conclusion that it should be under the management and direction of a practical dairyman One that knows the wants of the business, and who, knowing the needs, can point out the direction in which research is to be pursued The scientist will do the work The two thus united will make the station a benefit to the whole state

There is other work which should be done by the Legislature, and to which their attention has been called, a full account of which and its results, or rather want of results, will doubtless be found in the report of your committee appointed for the purpose at the last annual meeting

J. H. Broomell offered the following resolution, which was adopted:

Resolved, That the thanks of the Illinois State Dairymen s Association be tendered to the citizens of Dundee and vicinity for the very generous and hospitable entertainment that has been extended to the citizens of the State in attendance at these meetings

R. P. McGlincy offered the following resolution, which was adopted:

Resolved, That our thanks are due and hereby tendered to the local committee Prof. Quackenbush and his glee club and to Miss Bohn and Miss Price for their music readings and essays and to the Northwestern Railroad company, for the reduced rates given to members, and especially in running an extra train from and to Elgin each evening during the session of the convention

The committee appointed to examine and report upon the dairy implements, not having time to complete their investigation before the convention closed, were granted permission to hand their report to the Secretary for publication, which they have done, as follows:

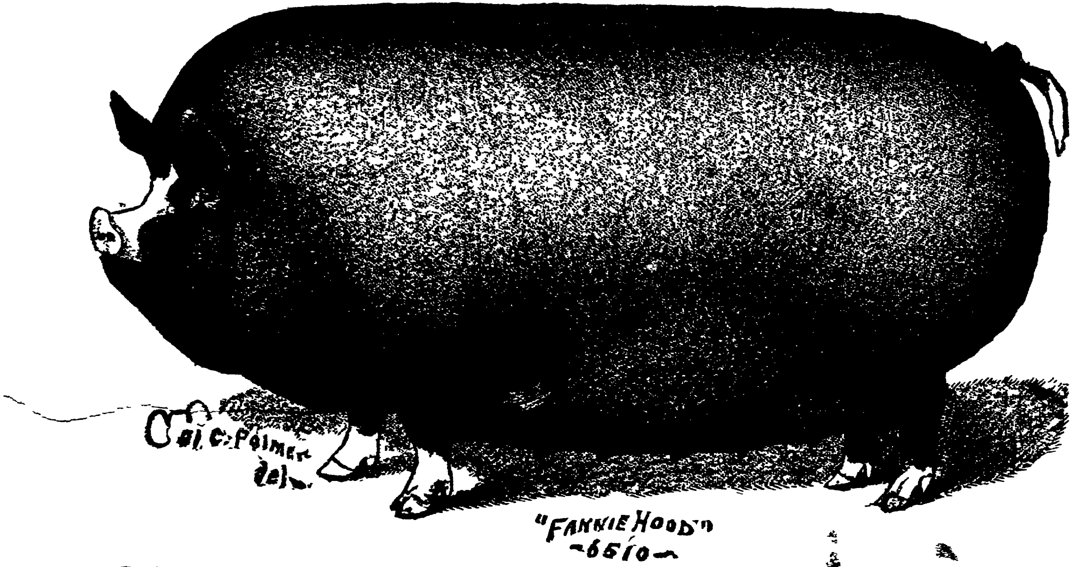
Your committee on dairy utensils beg leave to make the following report We have examined the Fairlamb cans for gathering cream and the Cooley creamer represented respectively by Messrs Wanzer and Buchanan, and find that while each has its peculiar advantages, they are both well adapted to the uses for which they are intended, viz the raising of cream in private dairies, also for gathering cream in localities where that system is in vogue, and we recommend them to the favorable consideration of all who are interested

Respectfully submitted,

D C Adams
D S Jencks
B Cox,
Committee

The President appointed the following committee on statistics, in accordance with the resolution offered by George P. Lord: George P. Lord, Elgin; R. P. McGlincy, Elgin; C. C. Buell, Rock Falls.

The President returned his thanks to the members for the kindness shown him during the session of the convention, and declared the convention adjourned *sine die*.



Berkshire Sow, Fannie Hood, exhibited by A. M. Fulford, Bel Air, Md. Awarded Sweepstakes Premium, State Fair, 1881.—p 453.

ILLINOIS SWINE BREEDERS' ASSOCIATION.

PROCEEDINGS

OF THE

THIRTEENTH ANNUAL MEETING.

STADE FAIR GROUNDS,
PEORIA, September 27, 1881.

The Illinois Swine Breeders' Association met in regular annual session, in the Secretary's office on the Fair Grounds.

Called to order by the President, Charles F. Mills.

The resignation of the Secretary, A. J. Lovejoy, was accepted.

James W. Boston, of Jacksonville, was nominated and elected Secretary, by acclamation, for unexpired term.

Minutes of previous meeting read and adopted.

The President addressed the meeting as follows:

PRESIDENT'S ADDRESS.

It is apparent to observing men that the improvement in form and early maturity of swine has so thoroughly absorbed the attention of breeders of late years, that the equally important matter of quality of flesh has been almost entirely neglected.

The handsome packages of animated lard exhibited in the swine pens at the Fairs and the Fat Stock show are attractive, and show how nicely the form may be modeled by the skillful breeder and generous feeder.

There is an undue proportion of fat to lean in "the hog of to-day" to tempt the epicure having a taste for juicy, well marbled pork.

The practice of confining in pens and "feeding strong" from time of farrow until the hogs are shipped to market, is contrary to nature and it is doubtful whether this system is as profitable as the old custom of allowing hogs to graze in ample enclosures until early fall when those to be marketed were quartered in feeding lots of such size as to enable the animal to take sufficient exercise for health and a reasonable development of muscle. The grain feeding according to the old custom, commenced as soon as roasting ears" were well filled, which with the green stalk afforded strong as well as coarse food in good proportion for thorough assimilation

As the matter of quality of pork receives proper attention, a change in the diet and care of swine takes place

Hogs fed for home consumption by men who appreciate quality, are not closely confined from time of farrow and fed on highly concentrated diet until ready for the knife, but from early spring are allowed to graze in clover or other pastures take exercise and develop a streak of lean as well as fat, until just before time for butchering when the grass fed hogs are confined in feeding lots of ample size and the flesh hardened or "finished off with corn

The Association has called out many valuable papers and the published discussions following have formed no small part of the interesting literature relating to the breeding and feeding of swine

The Association can be of much more service to breeders and feeders of swine in providing for a series of practical tests that will aid in determining the comparative value of the several pure breeds of swine

The three questions which especially interest all concerned are, early maturity, cost of production and quality of meat

The majority of breeders are prejudiced and each is firmly impressed with the belief that his favorite breed of swine excels all others in the essential qualities that go to make up the most profitable hog

This impression is not based upon the result of carefully conducted experiments, but upon some fancied superiority or perhaps some neighbor who is a good feeder and breeder has set the example

The great majority of farmers try everything now and are constantly changing from one breed of swine to another because their stock has run out, owing to neglect and promiscuous in-breeding and the breeds set aside are abused and made responsible for bad management

The limited number who breed hogs simply as a business without any preference are hardly sufficient to more than make the exception necessary to establish the rule

There are too many feeders of the improved breeds of swine that have not learned that there is a difference in quality of product of the several breeds of swine or that a top price is paid for extra quality

The markets are the best educators and each succeeding year there will be a decreased number of feeders who do not appreciate the difference in the quality or demand for particular breeds of swine

Something more is demanded than simply a thrifty hog that matures rapidly and makes a large gain from a given amount of corn

The monster steer so common in the markets a few years since patched with bunches of unsaleable coarse fat has been driven from the export market by the smooth evenly fatted bullock that will cut to the greatest profit on the block and furnish the consumer with the largest proportion of desirable cuts The discriminating public will soon offer sufficient inducements to feeders of swine to make it an object to give as much attention to quality of pork as is now given to beef

The packers of fancy brands of pork products are more exacting each year in the matter of quality which is not determined by the weight of the hog alone

It is well known to shippers that a smooth lot of evenly fatted hogs of certain breeds bring more money on the market than an even lot of hogs of other breeds of similar weight.

It should be one of the prime objects of this Association to assist breeders and feeders in deciding such matters and to practically determine which of the several breeds combines the essential qualities as the most profitable hogs for the farmers to raise to meet the demand for pork of the best quality

The State has an Agricultural College and experimental farm, managed by a competent corps of professors who have rendered the farmers of the State much valuable service in making tests in feeding stock and growing crops.

The Dean of the Agricultural College has manifested a desire to conduct experiments of general interest to the agriculturists of this State

The members of this Association can without inconvenience or much individual expense, provide the Agricultural College creditable specimens of the several breeds of swine for a thorough and impartial test, that would largely determine the feeding qualities, and the cost of production

The test of the quality of product might be made in connection with the Fat Stock Show, by a committee of experts appointed by the State Board of Agriculture to superintend the slaughter and make a detailed report of weight of the various parts, the distribution of at and lean, and the comparative value as determined by the quality.

The Illinois State Board of Agriculture, would doubtless if requested, offer premiums at the next Fat Stock Show for slaughtering tests of swine. The exhibition of swine in connection with the Fat Stock Show has been good; but quite limited.

Swine breeders have neglected the excellent opportunities provided by the managers, for demonstrating the comparative excellencies of the several breeds of swine

Some of the more popular breeds have scarcely been represented, while the aggregate number of swine of all the breeds at any of the Fat Stock Shows, would not reflect credit upon the enterprise of the breeders of any single variety.

This Association has a large and influential membership who should resolve, and see, that there is a large and creditable exhibition of swine, at future Fat Stock Shows.

The highest honors awarded swine at all the Fat Stock Shows, have been justly won by our breeders, and we hope Illinois breeders, may in future sustain the reputation they have so long enjoyed in this respect, and that the large demand from all portions of the country where pure bred sires and dams are needed, may continue to increase the wealth and prestige of the many successful swine breeders of this State.

The quality of flesh of a native hog that has been allowed to graze and feed upon sufficient mast, is so much superior to the fat, oily pork of the improved breeds, generally found on the market as to be beyond comparasion. It will be understood that reference is made to swine that have been closely confined and "pushed" from birth with the almost universal corn diet.

The reverse would be true if the natural conditions of the improved breeds, so essential to the health and developement of fat and lean in due proportion received proper consideration.

It may be unnecessary to state that it will pay well to feed hogs while on pasture, a liberal daily allowance of bran, ship stuff and corn, to supplement the laxative grass diet and ensure the most rapid development, consistent with the best quality

There is another matter which is worthy the attention of the Association, viz., that of giving proper encouragement to the breeders of animals exhibited

There is a growing tendency among a certain class of stockmen to purchase animals for exhibition

The enterprise of such exhibitors is generally rewarded with liberal premiums, and they deserve credit for their efforts in collecting choice specimens from various breeders that would not otherwise find their way into the show ring.

The matter of offering a liberal premium to breeders of swine exhibited at the Illinois State Fair, is suggested under such conditions as may be agreed upon by the Association.

The following resolutions, introduced by B. F. Dorsey, of Perry, Ill., were adopted:

Resolved, That the views of the President in reference to the offering of premiums by the Illinois Swine Breeders' Association to breeders exhibiting swine at the Illinois State Fair meet the hearty approval of the Association.

Resolved, That the breeders of the several breeds of swine be requested to subscribe not less than $50 for prizes to be awarded each of the breeds upon conditions agreed upon by the Association

The following amounts were then pledged for the Berkshire prize:

Charles F. Mills, Springfield Ill	$10 00
A. M Fulford, Belair, Md	10 00
J. W. Boston, Jacksonville, Ill	10 00
W. C. Norton, Aldenville, Pa	5 00
A. & J. Dorsey, Perry, Ill	5 00
Caleb Letton Jacksonville, Ill	5 00
Springer Bros., Springfield, Ill	5 00
Total	$50 00

The following amounts were pledged for the Poland China prize:

H. C. Castle, Wilmington, Ill	$10 00
A. &. J. Dorsey, Perry, Ill	5 00
J. A. Lawrence, Connersville, Ind	5 00
Total	$20 00

Motion of Mr. Castle carried, that a committee of breeders of Poland China hogs be appointed by the Chair to collect sufficient funds to make up the balance of $50.

President appointed as said committee, Messrs. H. C. Castle, B. F. Dorsey and J. A. Lawrence.

Motion of Mr. J. W. Bosbon carried, that the breeders of other varieties of swine be requested to provide sufficient funds for prizes of similar value, and that the officers of the Association be authorized to advertize such prizes as are provided.

Motion of Mr. Springer carried, that a committee of three be appointed to prepare conditions governing competition for the Swine Breeders' prizes.

President appointed as said committee Messrs. Springer, Boston and Castle.

The committee made the following report, which was adopted:

To the Illinois Swine Breeders' Association

Your committee would recommend that the prizes offered by the Association be offered on the following conditions to the breeders of the best pens of Berkshire, Poland China and other breeds of swine viz.

Pen to consist of boar over 1 year old, two sows 2 years old or over, two sows 1 and under 2 years old, and two sows under 1 year old.

1 All competing animals to be of recognized pure blood, and to have been bred by, and at the time of exhibition, to be the property of the exhibitor. Award will be made only in case of competition.

2 Each pen to be composed of animals of the same breeding.

3 The exhibitor to furnish, at the time of making entry, a written statement giving as near as may be, the pedigree age, weight date and manner of feeding, and other important facts connected with the breeding and the management for the past year of the animals exhibited by him Such statement to be verified by affidavit of the exhibitor.

4 All competing animals to be scaled by the standard adopted by the State Swine Breeders' Association, and the record so made to become a part of the report of Examining Jury

5 The party securing either of the prizes to hold it *in trust* until the opening day of the first succeeding Illinois State Fair, when it shall be placed in the hands of the President of the Illinois State Swine Breeders' Association to be again competed for. When taken the second time by any exhibitor, the prize is to become his actual property

PHIL M SPRINGER,
JAMES W BOSTON,
H C. CASTLE,
Committee.

Caleb Letton introduced the following resolutions, which were adopted:

Resolved, That the recommendations of the President in reference to the feeding test of the several breeds of swine under the direction of the Dean of the Agricultural College, are worthy of consideration and that the results would be of much practical value in determining the economical production of pork.

Resolved, That breeders of the several breeds of swine be requested to send specimens of the several breeds to the Illinois Industrial University, to the end that the comparative feeding qualities, cost of production and quality of product may be thoroughly and impartially tested.

The following breeders agreed to present the Illinois Agricultural College a barrow for the feeding trial—the same to be exhibited and slaughtered at the Fat Stock Show.

Berkshire, Caleb Letton, Jacksonville, Ill.
Berkshire, A. M. Fulford, Bellair, Md.
Poland China, J. A. Lawrence, Connersville, Ind.
Poland China, H. C. Castle, Wilmington, Ill.
Chester White, B. F. Dorsey, Perry, Ill.
Essex, Taylor Bros., Waynesville, Ill.

Motion of Mr. J. W. Boston carried, that the Illinois State Board of Agriculture be requested to provide for a slaughtering test for swine in connection with the Fat Stock Show, by offering premiums for the best dressed carcass.

Mr. Taylor introduced the following preamble and resolutions, which were adopted:

WHEREAS In value the hog crop of the country largely exceeds the aggregate value of the product of meat animals other than swine and

WHEREAS The inducements offered for exhibition of hogs at the Fat Stock Show are not in proportion to the vast interests represented when compared with the offerings to cattle and sheep therefore be it

Resolved That the Illinois State Board of Agriculture be and is hereby requested to sufficiently increase the Fat Stock premiums on swine as to justify feeders in going to the expense of making a creditable show of fat hogs

On motion of Mr. Fulford, the Secretary of the Association was instructed to send a copy of the preamble and resolution to Hon. David Gore, superintendent of the swine class, and request him to present the same to the Board at the next winter meeting

The following papers were then read and discussed

Essentials in successful breeding and management of swine.—Dr. N. H. Paaren, State Veterinarian, Chicago, Ill

Swine Breeding, by Hon C G Taylor, Galesburg, Ill.

Purity of Breeding in Berkshire Swine, by Phil M Springer, Editor of the American Berkshire Record, Springfield

The following resolutions were adopted

Resolved That the thanks of the Association are due and are hereby tendered to the gentlemen who prepared the instructive papers read at this meeting

Resolved That the papers be published in the annual report of the Association

Resolved That the Secretary be instructed to present the proceedings of the annual meeting and the papers read to the Secretary of the State Board of Agriculture and request the publication of the same in the next annual report of the Department of Agriculture

On motion, adjourned till Tuesday evening of the week of the State Fair of 1882

A. J. LOVEJOY, Secretary. CHARLES F MILLS, President.

PAPERS READ BEFORE THE ILLINOIS SWINE BREEDERS' ASSOCIATION.

ESSENTIALS OF SUCCESSFUL BREEDING AND MANAGEMENT OF SWINE.

BY DR N H PAAREN STATE VETERINARIAN CHICAGO ILL

We cannot consider breeding of swine a hard business when a person has taken the trouble to study the proper points of the animal he wishes to breed then provides himself with fitting material for a start and attends to a few simple laws which are all that is commonly known at present upon a subject shrouded in obscurity throughout The greatest difficulty in commencing breeding of any species of domestic animals unless circumstances favor unusually is the obtaining females of worth When you consider how much depends upon the female,—in fact nearly all but external shape wherein the form of the sire is mainly followed—and when you calculate the time, the pains the cost each eminent breeder has expended in establishing his favorite type to sell the main element of the compound even for a startling figure would, at the end be simply like dissolving pearls in a goblet for a single reckless draught

How much is altogether due to the female we scarcely know Briefly it may be stated, for successful breeding it is requisite that you use no female which has bred before, without knowing what the cross was as it is about universally allowed now that the first union leaves an unmistakable trace upon all succeeding issue It is especially unsafe to breed from a female that has paired with any unsuitable partner When a white sow is coupled with a black boar it is quite as likely as not that when she breeds by one of her own color again there will be one or more black ones, as a memento of the former family.

Since males communicate their organism with obvious effect they are in request among breeders for improving stock High prices have been given and high premiums annually offered for superior males It is fortunate for the rapid extension of improvement that the male predominates in the propagation of his species for by polygamy one male can serve many females and thereby extend his progeny in numbers, whereas a female produces only a limited number during the year

When animals with the characteristics of a common type, distinctly and securely set, are paired the result is all but certain Then, indeed holds good the favorite but otherwise deceptive apothegm of the breeder that like produces like' The right stamp of produce will come out if you get the right elements to begin with But the hunting for these elements is problematical You may be lucky and you may be lost In a state of nature each species of living thing preserves its likeness But it is not so where the hand of man interferes It is then that uncertainty begins—that like no longer produces like as a matter of course but only to a certain degree and under the hand of a master Then comes the breeding in-and in with the immediate consequence of confirmed resemblance fine bone increased aptitude to fatten but with the ultimate unhappiness of a scrofulous tendency and infirm constitution from which some strains of the more terribly high-bred continue to suffer

It should be a rule with all breeders never to breed from the diseased or the defective, no matter what the ailment as all infirmities are apt to be hereditary. It is also desirable that the parents be neither too old nor too young The offspring of either is liable to be small and to refuse to grow however well attended to On no account part with a desirable breeding animal There is but little profit to be looked for when either sire or dam are in too high condition or too fat Another secret in breeding domestic animals is to suit the breed to the soil and the climate An error in which many breeders indulge is, to cross an animal defective in one point, with another animal especially favored in that respect Why breed from a defective animal at all? If a favorite, that is often given as a sufficient reason, and in that case you might be content to take what you get Put good to good and you endorse an excellence, but we cannot comprehend the theory upon which an animal is picked with one peculiar shape to counteract and correct the malformation of another. We should let the malformed one alone If you have the requisite judgment, and chance offers, a good cross is sure to tell. But it must not escape you that it does take exceeding judgment when a certain point is reached in the improvement of a breed or family type to alter it with beneficial effect Good keeping in early youth undoubtedly has a great deal to do with the expansion and development of an animal s frame and so doubtless the converse holds good

In the matter of breeding and management of live stock everybody will advise you to do what he himself would do but you are to consider and judge for yourself whether you are likely to do it as he would How difficult is it to steer amidst so many doctors Rather in these matters as in all cases requiring the aid of intelligence be after due consideration and listening self reliant You may fall often but you will ultimately walk

SWINE BREEDING.

BY HON C G TAYLOR GALESBURG ILLINOIS

My object in offering this paper to the public is to show in as plain a way as I can the importance and great good resulting to the common farmer from year to year through the efforts of those who spend their time and money in fitting up suitable places for the comfort of hogs prepare proper feed general treatment of the young pigs to breeding age selection of males and females by which an improvement is made at every crossing The necessary attention to the business and expense of visiting perhaps far away different families of the same breed and selecting such as will improve their home herds at each crossing cannot be borne by the farmer who is mainly benefited thereby To carry on this enterprise with success every move must be watched with studied care A bad selection at the start cannot be overcome by many after crossings The sow will present in her decendants many of her leading parts in form and general constitution The boar more strikingly so Allowing this as we must that he bestows his blood upon each pig of the litter equal to that of the sow it becomes necessary in every instance to breed from a boar superior in form and constitution to that of the sow To do this the swine breeder cannot be too careful in selecting the proper males for here as it seems to me is the great secret of success as an error on the start will take years to overcome

When the breeder has studied his purpose fully and wisely from the start to his ideal of a large herd of superior swine he has in his mind the result of his labors and every move as he goes along is to him a fulfillment of previous arranging and thus meets with no disappointments He also studies his location as regards competition in making sales and also nearness to railroads for convenient shipping When he has gone through all this expense in fitting up his establishment and selected his breeding animals from the best herds in the country regardless of expense he has only made a beginning To keep up this *beginning* successfully and to avoid too closely breeding in and in he must frequently select males that are not related to his herd and pay high figures

Time is required to bring his herd into public notice Here is an item of considerable importance During the time of making sales which is usually in the fall and early winter his time must be given to all callers to see his herd whether they want to buy or only to *have a visit and see the pigs* No callers or sight seers must go away hungry thus his table is required to satisfy the inner man Correspondents to reply to boxes to prepare for shipments of hogs to customers hauling to Express Office pedigree books and records to safely keep Put all these and other items together much money has been expended and the breeder is ready to supply customers

When the breeders of swine have so managed as to grow up a herd of the best the common farmer has a place to go to to find animals from which to keep up and improve his home herd or to start anew with pure blood This favor to him cannot be too highly appreciated He can find the best of the breed and deal with a man whose reputation is involved in every breeding animal he sells backed by pedigree records He consults with the practical breeder as to the form age and pedigree needed to wisely better his herd As the male stamps and becomes half of all his get this fact should have great weight in making the selection with every customer and he should be sure that the one he buys is better in form and purity of blood than his best ones at home Then his herd is ever being improved When an inferior boar is used even but slightly so every litter deteriorates and many dollars even hundreds of dollars are lost in one year s breeding Not to one year only is the loss but years even from better blood will be required before the error on the start is fully worked out Could this fact be fully understood and acted upon by every breeder the result would be very apparent in only a few years It is far better to pay the practical and studied breeder fifty or even a hundred dollars for a choice six months pig to take home to breed from than to use an inferior one with his sow as a gift, or *I thank you sir* Never use a *grade a boar* Better go fifty miles and pay a round figure for a pure pedigreed one This doctrine will hold good anywhere in any State or in any breed of hogs Fifty years experience in handling hogs warrants me in speaking as plainly as I do on this point

Perfection is not reached in any of our meat producing animals But rapid strides have been made in the last few years The Berkshire Poland China Essex Suffolk Yorkshire Chester White Jersey Red and Victoria breeds all have their points of excellence and their favorite buyers and breeders When the common farmer selects the best from these established breeds and follows my rules of breeding he can but succeed *provided* he does his part in care and feed and he should ever be grateful to those who have spent their time and money in bringing these breeds up to so high a standard of perfection

It seems to me that the time for importing swine from England for breeding purposes among the American herds to better them, has gone by England has furnished us with the Berkshire Suffolk and Essex hogs Have these importations deteriorated in our hands? I think not Can we not to day show as good and better animals of these breeds as can be found and brought from over the ocean ?

There are men among us who have had long experience in breeding swine in England, and also in America and they tell us that our herds of these breeds are even equal to, and often better than the imported If we admit that imported swine are better than ours do we not at the same time admit that the English are more skilled in breeding and feeding than we are from the same breeds? I feel safe to say here, that our American hog products in their varied shapes in the English markets that are here cured and prepared after the English plan are preferred by them in their own markets If this be so, then, why the necessity of future importations?

We have the Chester White, originating in Pennsylvania, Poland China in Ohio, Jersey Reds in New Jersey, and the Victoria in Indiana These, with the old English breeds, certainly furnish us with the best hogs we have any knowledge of in the world

PURITY OF BREEDING IN BERKSHIRE SWINE.

BY PHIL M SPRINGER, SPRINGFIELD, ILL

It is sometimes said by writers on the different breeds of hogs that Neapolitan swine have been used in England to improve the Berkshire

Within the last year my attention has more than once been called to the recommendation of a prominent writer in the 'American Agriculturist,' that the Essex be used as a cross on the Berkshire A man with whom the Essex is a special favorite and in which breed he has much invested may be excused for giving such advice when it is considered that were his suggestion adopted the demand for his stock would in all probability be greatly increased Self interest may here claim to be half-brother to self-preservation—a sort of first-law of nature But what shall be said of a public journal professing devotion to the best interests of the farming community, when it gives circulation to such teachings without a word of caution to its readers much less reproof to the writer thereof One of the best informed breeders in America was not far from right when he declared that were such a recommendation carried out fully in the country it would do more harm to the swine interests in a single year than the 'Agriculturist' could do good were it carried on for a thousand years The idea that the Berkshire has been or can be improved by the use of the Neapolitan hog should be sharply rebuked by all interested in perpetuating in their ancient purity the world renowned Berkshires

It is a well established fact in the history of Berkshire swine that the first decided improvement in them began over one hundred years ago in England and was the result of crossing the Siamese boar upon the old Berkshires then common in England It is not improbable that the white Chinese boar was used to some extent as a cross on the Berkshire in those early years of its history

There is no doubt but that in later times attempts at improvement have been made by the use of other breeds as for example the Neapolitan and also Essex itself improved by Neapolitan But neither these nor any other crosses have ever resulted in any real or lasting good to the Berkshire and the best Berkshires of the present day are those free from any taint of any such course of breeding Experiments of this kind have repeatedly proved the wonderful capacity of the Berkshire to stamp upon other breeds its own good qualities In so far as the Berkshire itself has been affected by those experiments with the Neapolitan or the Essex the result has been to impart to the progeny the disposition to lay on fat separate from the lean As a consequence there is lost in such cases the fine grained juicy well marbled meats, for which the best Berkshires have been so long and are still so highly valued

Those who have seen the difference between the well fatted muscular beef—like meat of a pure bred Berkshire and that of our fatted pork where lean and fat are stored separately do not think highly of the so-called improvement arising from the use of the fat accumulating Neapolitan whether it comes direct from the Neapolitan or through the Essex

It has been said that Berkshires and Essex are quite similar in the quality of their flesh and that they have the same tendency to lean meat If this were true a cross of the two breeds might be made with some advantage, though in just what particular, if both are so much alike is not very apparent

On the contrary the pork of the Essex, as the admirers of that breed will admit has scarcely any lean in it but is as fat as the Prince Albert Suffolk, or small White Yorkshire In this respect it resembles also the Neapolitan pork although the latter as I have been told has usually a different taste from those above mentioned, it being said to resemble somewhat a very fat and tender chicken of four to six months old

Taking into consideration the fact that Berkshires are the only well-bred swine that produce the choice hams and bacon, so largely in demand for export and for home consumption and that this demand increases from year to year it is a matter of no small importance that we guard with jealous care the purity of the breed—never for a moment entertaining the thought of an outside cross

It is well that we study carefully the characteristics of the different breeds of swine, that we may be enabled to detect readily evidences of impure breeding, should any exist in the stock from which we may think of making our selections For example with a good knowledge of the Neapolitan breed one may, on traveling through the herds of Berkshires in America see at a glance, almost whereon even a distant cross of the Neapolitan has occurred This cross may be suspected wherever there is found a marked deficiency of hair, or a rough corrugated skin, and tendency to softness of flesh and disposition to lay on fat in places, apart from the lean These indications of the objectionable cross will not unfrequently crop out in one or more pigs of a litter, several generations after the introduction of alien blood.

Although the Berkshire is without doubt the oldest and purest breed of all our domestic swine yet, as with all others there are among them some of doubtful purity However useful these may be in a general way and however reluctant some parties may be to think them any less valuable than more purely bred animals we should always prefer to select from the purest and best strains those strains in which there has been no attempt at the so-called improvements by crossing with other breeds Such attempts we feel assured are of no real worth but on the contrary a positive damage to the best interests of the swine breeding fraternity

As I have heretofore said there is no necessity in these times for breeders of Berkshires to resort to an occasional outside cross with another breed for the purpose of avoiding the evils of continuous breeding from animals of the same stock Excellent strains of improved Berkshires are found in almost every region of the Globe where swine are kept The best families thus widely separated are subjected to different climatic influences and the most varied systems of management By this means all the real or supposed advantages to be secured by the introduction of fresh blood can be as surely, and without doubt more safely reached by the bringing together again parts of families thus separated for several generations

To those who have found in their herds traces of impurity and who would be glad to have it eradicated or to replace such stock with better I would say do not be discouraged with the discovery or give up in disgust and a general mistrust of all principles of breeding but rather in future be more careful in the selection of your breeding stock Bear in mind you have an acknowledged standard of excellence by which to judge as to outward appearance and a public record of pedigrees by which to determine the breeding Use both of these and require that every animal placed in your herd shall conform as nearly as possible to the standard and be accepted for registry in the record Depend not on the record alone, nor on the standard alone Require excellence in the animal and a clear pedigree besides Send every out crop of an out cross to the pork barrel and record only those exhibiting the true characteristics of the breed

I speak not by authority of nor for the American Berkshire Association but what as one interested in the improvement of our hogs I believe to be right If by the general adoption of such a policy a less number of animals are recorded they will be all the better in quality and the record will grow in value to those who avail themselves of the advantages for selection which it affords

In case objectionable traits are found cropping out in the stock you have gathered about you with much care and at great expense you need not necessarily discard all and start anew Begin however at once to breed out the evil With the best you have and the aids of the Standard and the Record it will require a few years out of judicious selection and management to practically overcome the error complained of Determine that no admixture of other blood shall ever be encouraged or allowed and let not even the coveted designations of imported or English Prize Winners influence you to use any other than strictly pure bred animals

ILLINOIS WOOL GROWERS' ASSOCIATION.

ANNUAL MEETING 1881.

State Fair Grounds,
Peoria, Ill., September 29, 1881.

The Illinois Wool Growers' Association was called to order at 7 o'clock P. M., in the office of the State Board of Agriculture, by President A. M. Garland.

Minutes of the last meeting read and adopted.

The following report was received and adopted:

To the Illinois Wool Growers' Association:

The undersigned would beg leave to report that three elegant large silver challenge cups have been purchased, suitably inscribed, and are now in possession of the officers of the Association, to be awarded to the breeders making the best exhibit of long, middle, and fine wool sheep.

The subscription list and voucher from the manufacturer are presented herewith.

Respectfully submitted,
A. M. GARLAND,
CHARLES F. MILLS.

Report received, and committee discharged.

Motion of Mr. Strawn carried, that the number of long wool sheep necessary to make an entry for the breeders cup be as follows—one ram and five ewes one year old—one ram and five ewes under one year old.

Motion of Mr. Cotton carried, that the breeders of middle wool sheep be required, when competing for the challenge cups, to exhibit the same number of rams and ewes of corresponding age as the breeders of long wool sheep.

The Association proceeded to the election of officers for the ensuing two years, with the following result:

OFFICERS.

President—A. M. Garland ... Springfield
Secretary and Treasurer—V. P. Richmond ... Moro

VICE-PRESIDENTS.

1st district—	Daniel Kelly	Wheaton
2d “	H. D. Emery	Chicago
3d “		
4th “	Geo. E. Peck	Geneva
5th “	J. L. Moore	Polo
6th “	Samuel Dysart	Dixon
7th “	Abner Strawn	Ottawa
8th “	F. E. Day	Streator
9th “	Andrew Oliver	Elmira
10th “	M. C. Brownlee	Monmouth
11th “	R. M. Bell	Brighton
12th “	J. R. Megginson	Jacksonville
13th “	Thomas Taylor	Waynesville
14th “	J. S. Brown	Decatur
15th “	John Turner	Todds Point
16th “	O. B. Nichols	Carlyle
17th “	James M. Scott	Belleville
18th “	R. L. Robertson	Sparta
19th “	Joseph Skeavington	Albion

On motion of Charles F. Mills the President was authorized to appoint an expert for each of the three classes of sheep competing for the breeders' cups offered by the Association.

Papers were then read by the following gentlemen, and generally discussed by members of the Association and others in attendance.

"Judging sheep by scale of points"—Hon. Samuel Archer, St. Louis, Mo.

"Cotswold sheep"—Col. Charles F. Mills, Springfield, Ill.

"Shropshire sheep"—James Cotton, Rockford, Ill.

"Cheap wool"—R. M. Bell, Brighton, Ill.

The following report was received and adopted:

To A. M. Garland, President Illinois Wool Growers' Association

There were but three entries of fine wool sheep for the breeders' cup. As indicating the high merit of the animals competing, the score of each animal competing is given herewith:

	F. E. Day	M'Fadden Bros.	Taylor Bros.
Ram, any age ... points.	94	92	90
Ewe, 2 years old	95	89	92
“ “ “	97	82	88
“ “ “	95	83	91
“ “ “	90	96	89
“ “ “	98	89	89
Ewe, 1 year old	94	88	91
“ “ “	91	87	91
“ “ “	95	89	89
“ “ “	98	92	88
“ “ “	93	90	91

	F. E Day.	M'Fadden Bros.	Tayfor Bros.
Ewe lamb	95	89	86
" "	95	95	83
" "	90	89	87
" "	95	93	82
" "	95	93	89
Total	1,510	1,436	1,416

The cup is awarded on the advertised conditions to F. E Day, of Streator, Ill., on the very high average of about 95 out of a possible 100 points on each of the 16 sheep entered.

Respectfully submitted, V. P. RICHMOND.

On motion, the Association adjourned, to meet at the same place at 7:30 o'clock, P. M., Wednesday of the week of the State Fair of 1882.

A. M. GARLAND, President.

V. P. Richmond, Secretary.

POINTS OF EXCELLENCE IN SHEEP, AND STANDARD FOR AWARDS AT FAIRS.

BY SAMUEL ARCHER, ST. LOUIS, MO.

All things have a beginning, and all things exist by law There is no such thing as chance, but unalterable laws control and bring about results. All things animate and inanimate exist, and it is above and beyond the power of man to create anything He can only change the form, bringing the influence of his intelligence to bear, operating by and with the laws of nature

Reason is his strength, observation and analogy his progressive power, and by the proper exercise of these great prerogatives man may accomplish all things short of a miracle

To change the form of existing matter, and by intelligence improve it, is an acme of success in life.

The Creator's command to innocent man in Eden was, "Keep it, and dress it," and to-day cultivate and improve is made equally as much our duty. In this we are not required to labor without means as the Israelites were required to make bricks without straw, but the means commensurate with, and adequate to the end to be accomplished, are within our reach.

Matter in all its various forms– minerals, plants and animals,—has been prepared by the Supreme Architect, and is not only adapted to the use of man, but is also his schoolmaster to discipline and train his intelligence to the exercise of its highest powers. To change the form of existing matter in its natural state, requires but the mechanical genius and muscular skill of the workman. The carpenter and blacksmith fashion inert matter as they will. In this way, too, works of art are formed according to the fashion prescribed by the adopted rule, which aims at the highest ideals, thus the sculptor is enabled by his skill to chisel out of the solid rock almost the exact physical personation of a human being, the minute outlines of the body being all reproduced in form, and even the countenance with its expression of thought and feeling delineated.

In the inorganic mineral world the mental faculties of man demonstrate his power over created matter. The chemist, by his knowledge of the compatibles and incompatibles, will separate any compound substance in its original constituent parts, or by the combination of materials he may form a compound matter differing from either of its component parts, better adapted to man's use or enjoyment, and perhaps more durable in substance, or more beautiful in appearance.

Plants are propagated, and varieties changed and indefinitely increased in number and established in character, by the intelligence of man. But that to which I wish at this time to call particular attention, is the power of the intellectual, or human being, over the matter of the animal kingdom in its formation and growth, and will only dwell upon this branch of my subject long enough to show that this power is wholly exerted by means of fixed laws.

The animal body is simply earth, the constituent parts of which have undergone the chemical changes necessary to their present form, and which form is contingent upon and subservient to the life of the animal. The living creatures increase and multiply after their kind. This is the one universal and general law governing the animal creation. "Like begets like," is a law conceded to be as universally unerring as that "the magnetic needle points to the north." True, the farmer, with his pick, his shovel and his trowel, can not go out and from his clay bank put up a fine milk cow, with the soft skin, the fawn color, the nicely covered horn with its rings of black, white and yellow, or with Guenon's milk escutcheon, but he can judiciously mate the cow he may own with the bull his neighbor may own, and thereby produce a calf which, if he feeds and nourishes it, will in time grow up to be his ideal milk cow. He is not the producer in a gestative sense, but as an incipient director of the conception, and the controller of the gestation, he is the producer, and properly termed the breeder.

If the intelligence of man, then, has this control over the propagation of the lower animals, it must be by his knowledge of cause and effect in the laws covering conception and gestation. He is the philosopher, and reasons by analogy, the cause and effect in mating of certain animals. A person who mates animals is a breeder, but only the person who is conversant with the laws governing reproduction, and is capable of mating so as to produce an animal answering to his wishes, is entitled to the name of a scientific breeder. According to his attainment in this direction is his ability, as a breeder, manifested. If in the offspring he fails, or comes short of his purposes, it is because he did not mate the animals combining the properties necessary to produce the result of his desire. As an example of man's power, in this respect, we have only to look out on your own Fair ground here, and see the fine exhibit of Percheron horses, similar in form and appearance. So also with the Poll Angus cattle with every hair black, and the Devons with nearly every hair red, and the Alderneys with an entirely different appearance, and yet fixed in their characteristics. See, also, the turkeys and chickens, the ducks and geese, the pigeons and rabbits. Could any say that these animals, with their established characteristics, come by chance, or that there was not fixed laws governing their reproduction, and that these laws were not familiar to, and availed of by man, i e, by the breeders?

Look into your sheep pens and see the similarity of the Cotswolds, one with another, and so, also of the Southdowns. Here is a fixedness of type which has been established by the adherence of their breeders to a standard of excellence, unwritten though it may have been, yet none the less a standard, and just here, I would remark, is the exemplification of the use of a standard at all.

If what I have said with regard to law governing in the production of sheep and other stock, and its manipulation by the intelligence of man be true, then it follows in the breeding of sheep, for example, that the breeder must not only comprehend these laws, he must have an ideal animal in his mind possessing certain excellence and qualifications, and this ideal animal with these qualifications, is his standard of points of excellence or perfection. He who has no standard and is producing sheep of every size, shape and comeliness, not working on a definite plan, and with no clearly definite view, is but a novice in the business and only a little way along the path and up the hill of scientific breeding.

He who has control of his flock in their reproduction, and is producing animals from year to year similar in form, size and appearance, and all gradually approaching the high standard of excellence characteristic of his breed or family, is indeed high up in his profession, and is already entering the elysian fields of success which border around the summit of perfection. He is worthy the name of scientist, and is a benefactor to the human race.

Why then need I argue the adoption of a standard in breeding, when there is no such thing as success in approaching perfection without it, and a complete knowledge of the physical organizations in their transmissions of characteristics? To my mind it is obvious, that a standard is essential and does absolutely exist with every man who breeds a sheep with any purpose whatever in view

But it may be asked, why make a general or universal standard? Why not let every man have one of his own? I answer that an agreement embodying the combined wisdom of a nation of breeders is more likely to be right and is safer, than the opinion of any one man, however wise Then, in union there is strength, and a nation full of sheep, all bred in lines to their respective purpose, will attain a reputation and usefulness in no other way to be had. The one looks to the establishment of an industry with a definite future, which will, in the growth and manufacture of its product, command and assume the investment of capital by reason of the assuredness and certainty of its results, while the other is the natural production of an ever changing material, from sheep bred with an aimless purpose. The one is an object generally understood, and prized for its valuable practical results, while the other would remind us of the useless jargon at the building of the tower of Babel. Where but one mind is exercised in forming a standard, some points are apt in time to become too prominent, and overreach their proper limits, in their relation to others. For example: how often do we see flocks possessing many good points, and perhaps in most respects, animals of merit, and yet, in some other points, they fall so short of perfection that they are discarded, and finally sink out of notice and are scattered.

The Saxon people took the Spanish Merino and bred them for fineness in quality of wool, and seemed to have almost neglected weight of fleece, and weight of body and constitutional vigor. The result was, the Saxon sheep, with some high points of merit, and yet producing but little wool, and being a feeble animal, they dwindled into insignificance.

The French took the Spanish Merino, and bred for weight of fleece and size of carcass, neglecting quality of wool, form of body, and consequently constitutional vigor. The result was another failure.

Had the great Napoleon Bonapart set up points of excellence for his national flocks, such as this one adopted by your State of Illinois, and had that standard been adhered to by the breeders of this famous national flock at Rambouila until now, I do not hesitate to say that France, and not the United States, would to-day be producing the model fine wooled sheep of the world. It was the want of a standard of excellence, with the points bearing a proper relation to each other, and to the whole, that caused these great sheep walks to lose the prestige they once attained for producing the best fine wool sheep. It was the want of a properly balanced standard persistently adhered to, which proved so disastrous in these two great families of Merino sheep. Will not the American breeders of all kinds of sheep take warning from the errors of those who have gone before us, and adopt such measures as will save our reputation while we have it?

I wish it understood that I refer to breeders of blooded sheep rather than to the endless variety of crosses and mongrels from which the great body of American wool is grown. Standard points of excellence for a breed should be one embodying in itself—First, the parts which go to make up the proper animal organization, assuring health and vigor of body and usefulness of carcass for mutton. Since mutton is our article of food for which the carcasses of all sheep are used, it is apparent that it should have its full share of attention in the standards of all breeds and varieties. Particularly may this be so, because the highest type of mutton sheep is also the highest type of constitutional vigor.

Secondly but not of less importance, the properties of fleece, which will make it most useful in the manufacture of the material for which it is intended.

If the breeders of the different varieties would adopt and adhere to a standard of fleece in quality, length, evenness, etc., which would distinguish them from any other variety, we might then have a stable classification of wools which would be generally understood by the growers as well as the manufacturer, and to which manufacturers could and would adapt their machinery with an assurance that each grade will continue to be grown.

You breeders of sheep in the United States have it in your power to establish and breed to points of excellence in wool which would in time be the acknowledged standard classification with manufacturers as well as growers. Wool having all lengths of staple and all qualities of fibre may be grown in this country to advantage. Then why grow long coarse wool on a Merino when it is and can be grown so much better on a Cotswold? For years these long wool varieties have been bred for this specific purpose. Why grow coarse wool on Merinos when it is grown so easily and properly belongs to the Middle Wool or Down sheep?

The short clothing wool of evenness and fine quality is most easily grown on the Merino, and it has been thus produced for hundreds of years.

It is not in the limits of my subject to discuss the merits of any standard here at length, and I will only remark here that the standards or points of excellence handed me, and which have been adopted by your association are good ones, and if the best sheep of the country very nearly approached either of them in points they would be much better than they are now, and in fact I do not believe there is a sheep anywhere that in point of excellence, will fill one of these standards. I may add that I do not think the scale of points for the Middle Wool and Combing Wools are so well described as that for the Merinos, and perhaps not so well delineated as they should be.

These standards should be minute in description. I do not say there should be only three standards adopted by breeders. From my knowledge of the sheep breeding and wool manufacturing business it is my opinion that four or at most five standards for the blooded sheep breeders would be sufficient to produce all the wools necessary. Especially is this so from the fact that intermediate staples will alway be grown upon grades and mixed breeds of sheep. I sometimes think that the main reason why we are slow in favoring standards is because we have not got the sheep that will mark high enough on the standard. This is a week position because for the same excuse, we might say we will cease to breed and improve towards perfection. Would it not be better and much more noble to set all our sheep aside and abandon all our prejudices and come together in an argument, about what should constitute a perfect sheep and then each go to work with our respective kinds and vie with each other honestly, to excel in producing the animals that will most nearly approach the standard? As the matter now stands a new wrinkle, or a new lump of fat, may start a new fashion, and they are now as numerous, and many of them quite as useless as some of the numerous fashions which constitute the ever-changing style of a lady's wardrobe.

As to the application of these standards in planning awards at fairs, I apprehend all would see and appreciate the utility after the plan shall have had a few fair trials. The purpose of our public exhibitions known as fairs may be classed for the purpose of making the progress of improvement and of indicating the person entitled to this merit, and for the purpose of education and as a means of social enjoyment. So far as sheep are concerned the object to be accomplished can be much more readily attained, if the standards to which the different classes are bred were more public and more generally understood and if the judges were required to indicate, in writing their judgment on each part of the scale in particular. This decision thus rendered and placarded over every pen of sheep where it belongs, would not only be a great means of general information, but it would tend to indicate and assist the breeders themselves in their improvements—not only this, but by thus requiring judges to give their judgment of merit on the different points for publication a long step will have been taken to insure from them a close inspection, and an honest and candid expression of decision, regardless of all favoritism.

To you gentlemen, sheep breeders of Illinois in your State Association belongs the honor of first having adopted points of excellence, as a breeding standard, for application in making awards at your fairs. I bid you ever good speed, and believe it is a mark of progress, and if adhered to will be a powerful and effective means to be used in your onward and upward march toward the goal of perfection.

THE "DOWN" BREEDS

BY JAMES COTTON, ROCKFORD, ILL.

There are several varieties of sheep known as Downs viz Southdown or Sussex, Shropshire Down, Hampshire Down and Oxfordshire Down The oldest and no doubt purest breed, is the Southdown noted for the superiority of their mutton, it being finer in grain (and consequently more juicy and better flavored) than any other breed and with a larger proportion of lean to the amount of fat They are strictly the true type of a mutton sheep and that is all the breeders claim for them They are rather light shearers and lose the wool on their bellies thighs etc when over two or three years old Their color in face and legs, should be a *light grey* or *brown*, the more fashionable color of the present day being the light grey, which is undoubtedly the true color The late Humphrey Webb (than whom there was no more reliable breeder, and from whose flock have descended almost all the prize-winners of the present day) was most particular in keeping strictly to the light grey color I have often seen Southdowns exhibited with *black* faces and legs, but, depend upon it, there has been some cross of either Shropshire or Hampshire introduced some time or other, in fact this is very frequently done (outside of a few of the most noted breeders) to give more carcass and weight of fleece and consequently make a more profitable sheep to raise, as they still retain their superior mutton qualities There is no doubt that the other families of Downs owe a great deal to the Southdown for their mutton qualities, but that is all the Southdown can really claim in the make up of the other Downs

The tenant farmers of Great Britain, who have to pay high rent and heavy taxes make it their constant study to breed and improve their stock of all kinds by experimenting and carefully observing which breeds give the most return and are consequently the *best rent payers*

I think the English farmer has fully determined that the breed of sheep which gives him the best returns for the food consumed—the sheep that will flock best and do with least artificial food and for the combined production of wool and mutton—is the Shropshire Down It is what the English tenant farmer calls the rent-paying sheep While producing a carcass of mutton equal in quality to the Southdown and a third heavier at the same age it produces a fleece of medium combing wool which will compare favorably in weight with any of the wool growing breeds—that is taking the average weight of a whole flock They are very prolific averaging about 60 per cent of twins and will suckle twins equally as well as a Merino or Cotswold will take care of one As a proof of the popularity of this breed of sheep, out of 464 entries of sheep at the Royal Agricultural Society show of England, this year, there were 303 Shropshire or over two thirds of the whole number exhibited

These Shropshires were founded about fifty years ago from the Longnynds or Cannock Chase sheep (a black face sheep noted for hardiness of constitution and superior mutton qualities) and by judicious selections of the best ewes and rams and breeding to a fixed standard they have now reached their present state of perfection I do not doubt that in a very short time they will become in this country (as they are in Great Britain) the most popular of all breeds The Staffordshire *Advertiser* of September 17 1881 in speaking of sheep at the Staffordshire Agricultural show says

In sheep the prizes were confined to *the* breed of the district which is unquestionably the Shropshire In the Midland counties it must be satisfactory to breeders to see the strides which this sheep is making in public or rather farming estimation The magnificent display at the Derby Royal is sufficient to say that such is the case They will thrive where others will almost starve Although no breed pays better for liberal treatment than the justly celebrated Shropshire the meat is equal to any and the amount of wool they will clip under good management is fairly liberal The farmers of this county appreciate their merit and the consequence is, the Staffordshire Agricultural Society do not offer prizes for any other breed

I think, with the foreign demand we have for good mutton, and also the enormous increase for home consumption, that the day has gone by for raising sheep solely for wool, more especially on improved farms, and within easy distance of good markets When crossed on the Merino or native sheep the half breeds are very hardy and good mutton and the wethers are worth in Chicago market, about a cent per pound more than the common native sheep

The Hampshire Downs are pretty much confined to their own county and a few adjoining counties, in the south of England They are classed as short-wooled sheep and are noted for breeding earlier in the season than any other breed, they consequently are valuable for raising early lambs which command a large price I have seen Hampshire lambs in April and May that would dress from 70 to 80 pounds They are generally kept on roots and artificial food, and do not thrive well on grass alone They are what are termed hurdle sheep in England—that is they are fenced closely on roots during the winter, and on clover, etc, during the summer months, and fed grain, etc, thus manuring the land, from which is afterwards raised enormous crops of wheat, etc I have seen them tried in this country, with not very good results, unless they have been well grained and highly fed. They like the Shropshire are also a good mutton sheep have black faces and legs, large ears, are longer in the leg and not so neat a built sheep as the Shropshire, heads and bellies not so well covered with wool, a much shorter fleece, and not such heavy shearers.

We next come to the Oxfordshire Downs, which are so closely related to the Cotswolds that they really ought to be classed as long-wooled sheep It is only within the last few years that they have had a separate class in the Royal and other shows, simply because they could not be bred uniform in character, but of late years more attention has been paid to this breed, which has brought them to a tolerably uniform standard The Cotswold has been most used in the make-up of this breed. They are the largest of all the

Downs breeds but lack the superior mutton qualities of the other varieties being much coarser and too closely allied to the long wooled breeds to be a good mutton sheep They are grey in the face thrive well on improved grasses and artificial food are not so hardy and will not flock so well as most of the other Downs They like the Hampshires, are pretty much confined to the county from which they derive their name I have seen some of the best specimens of the breed imported and exhibited in this country but have never yet seen any bred here that did the breed much credit However like most other breeds of sheep there is a place for them in this great country to improve the native sheep It is quite a matter of choice which is really the best of the Down families for crossing purposes A great deal depends on the class of sheep they are intended to improve From personal experience and observation and from its great natural perfections in symmetry uniformity quality early maturity and vigorous maintenance of its hardihood of constitution natural productiveness great scale weight and muscular proportions also its comparatively heavy and valuable wool with cutting properties I claim that th *Shropshire Down* stands prominent and unrivalled and has won for itself its present high position as a profitable sheep for all climates and every kind of soil and I anticipate a great future for them in this country

CHEAP WOOL.

BY R M BELL BRIGHTON ILL

The conditions surrounding the wool market of this country are such that the prices we obtain for our clips are generally unsatisfactory There is no certainty about it except that the thing will always happen to cut the price down at the very time you shear and when you wish to sell Hitherto sheepmen have sold their wool when it was off the sheep without much regard to what they got for it Farmers usually need a little cash about that time and take what is offered Wool buyers have learned to take advantage of this fact Many of them in the west depend upon a month or two active buying to run them through the balance of the year in the free and easy way they live Last year and this however the wool raisers have acted a good deal more independent than formerly They saw no just cause for the break in the market of the spring of 1880 They believed there was no sense in the course things took They were able to hold their wool and did it with pertinacity and unanimity that was surprising Manufacturers and dealers failed to take in the domestic clip at prices they were expecting to Wool growers were willing they should use foreign wool if they preferred to We held our wool and did well at it This year we were more cautious and enough domestic fleece was sold to prevent the importation of foreign wools It was a narrow escape for us though Had not wool been firm in England with an upward tendency two or three cents in our markets would have flooded us hopelessly again

We have learned some things in the meantime which we may as well accept as facts We are buyers of wool in the world's markets and shall continue to be for years Mortifying as the fact may be England holds the balance of power in the wool trade In these days of rapid ocean transit eight days can put upon our shores millions of pounds of wool The minute wool gets too high here or when a combination of wool manufacturers sees fit to break our market an order by telegraph to London sends prices for our domestic fleece to the bottom

Supply and demand govern the wool markets of the world, it is supposed but our American market is governed by foreign wools and by the caprices and manipulations of the brokers If we were absolutely powerless it would be the part of wisdom to quietly accept the situation gracefully but while we have millions and millions of undeveloped and unoccupied acres of land capable and every way suited to the production of the best wools precisely suited to the wants of our domestic manufacturers we ought to be nettled by the stinging fact that we are depending upon others who are knowing to our helplessness The remedy is in our own hands within our own reach The question to our wool growers is not what can we get for our wool but how cheap can we grow wool? To the wool growers of Illinois and everywhere else on lands worth $50 to $100 per acre this is an idle question There is some profit to them, but they cannot solve the problem It must be done on the cheap lands of the West and South From lands worth from one to three dollars per acre must come the solution to the problem How shall this country compete with Australia, South America, Asia and Africa? We have been trying to do this by the improvement of our sheep and the better quality of our fleeces We must continue these improvements with all the intelligence and energy our Yankee nation is capable of Let for instance as good sheep with as efficient care as those of Ohio West Virginia and Pennsylvania receive be placed on the eminently cheap lands of Southern Missouri, costing on an average say two dollars per acre and what would be the profits of such an investment? Then take in all the sunny south and what would be the results in ten years? We make no invidious comparisons against Colorado New Mexico Texas or any of the out-west regions There is much energy and perseverance shown by the western wool growers in meeting the inconveniences and uncertainties of wool growing on the plains They have made fortunes and sustained immense losses and are still going ahead with zeal and enthusiasm Their vast ranges and flocks suit the migratory and hap hazard system of sheep husbandry which they temporarily engage in None propose to go on to their ranges with their families to live permanently in safe comfortable homes They propose to chance it for a time until they get rich and then go back where they came from to live easy This is not the safest or best way Permanent homes mean comforts improvements culture of minds flocks and lands In Colorado they estimate five acres to a sheep on the natural range but as they crowd in upon each other they adopt irrigation fences and introduce alfalfa where it is possible and are able to keep large flocks on the same area of land Probably—yes very surely—the vast west will become wholly occupied in stock ranges Sheep are destined to send the cattle further to the front By degrees sheep are being introduced into the south and are finding favor even with cotton raisers themselves who have been educated to hate sheep It is our opinion here should be the true home of the American wool-grower From the land of sunshine and perpetual grass shall come the cheapest wool and the best wool Texas it is estimated, can make money at raising sheep with wool at ten cents per pound Georgia puts it at seven cents per pound If these two States can, then Tennessee Mississippi Louisiana and other Southern States can and will, in immense quantities

If this is so, you ask what is to become of wool raising in Illinois? There is no hope of any further protection from the government than we have and we are continually alarmed lest we lose the pittance of a tariff that we have I with you have been anxious and worried about this thing I felt that America must grow wool—had to grow wool—and that it had to pay us to do so even if we had to double our tariff to do it which I frankly admit to you is out of the question under the existing sentiments of our people We shall hardly hope to hold what we have much longer Because Illinois Ohio Pennsylvania New York Michigan or West Virginia shall not be able to grow wool it is no reason that the cheap suitable lands named above shall not grow all that our people require The improvement of the flocks the improvement of the care and handling and pasturage shall go on in the west and the south, until we shall compete with Australia or South America with or without a tariff to protect us While we believe in a protective tariff for weak American industries and particularly for the woolen and wool industry of this country for many reasons patriotic if none else we are inclined to believe the production of wool in this country would suffer less than we anticipate by the removal of our tariff The sheep on high priced lands can and would go on to cheaper lands better suited to the production of as good wool which would cost less than half what it does in Ohio, or any northern State Were it not for the selling of sheep Ohio New York Michigan or Virginia would go out of the business since wool does not pay them at the price which even they get for theirs It is time gentlemen we had looked this question straight in the face here in the north We shall get no more protection than we have, and we stand the chance of losing some if not all we now have We must grow wool We must compete with the ruder nations of the globe, and grow as good wool if not better We can not do this here Our lands are too high and are fitted to other industries There is plenty of land every way suited to the production of the cheapest wool It is not at our doors but it is not so far away, and there is every inducement to go and occupy it safely, comfortably and profitably for us and for our children after us Shall we do this before or after we shall be compelled to? I say compelled to for by the least reduction not to say removal of the protection we now have we shall be compelled to find better locations for our flocks or sell them to men who have the enterprise to do so Cheaper wool is the inevitable before us Cheap wool from cheap lands must come wince as we may When we shall have occupied all our domain we may find protection absolutely necessary, but until we have we feel a doubt about it These are coming changes which promise much to us Americans must grow more mutton for themselves and for England This can be done best on our rich valuable lands convenient to cheap rapid transportation lines Large areas hitherto sheep ranges are needed for agricultural purposes in this country Australia is experiencing the same changes, they are producing wheat and beef and mutton for the mother country South America is shipping meat to Europe by the new processes of refrigerators Texas is doing the same thing All of which takes from the wool growing industry By the new railway with Mexico we shall get wool in increasing quantities in exchange for our manufactures With all these changes we may hope to find the future of our own industry more favorable than we fear Any way, we must meet it by using our whole resources fully, economically and intelligently

COTSWOLD SHEEP.

BY CHARLES F MILLS, SPRINGFIELD, ILLINOIS

The history and important part the Cotswold breed of sheep has performed in the improvement of the popular breeds of sheep of the present day, would require a volume of considerable size In the short paper appropriate for this occasion it is not expected, neither would it be possible, to more than give a brief description of this well known breed of long-wool sheep

DESCRIPTION.

The Cotswold is one of the largest breeds of sheep representative animals tipping the beam at 300 and 340 pounds at eighteen months of age, 400 pounds and upwards at two and a half years of age.

It is at home on all soils, and produces a large carcass of mutton of good quality and a heavy fleece of combing wool, which enters so largely into the manufacture of fabrics worn by mankind

The best breeders agree that the Cotswold of "to-day' has a long straight body, well rounded ribs, flanking low down good full twist broad flat back full and low in brisket, a neat stylish head broad between the eyes, neatly tapering face a good arched neck, short legs, with head, jaws and legs well covered with wool, and altogether an attractive, spirited, and stylish body covered with long, fine, wavy wool, which is glossy, and in great demand for many purposes

They are quiet, docile, and make more rapid gain per day and give larger return in weight from a given amount of food, than any other breed.

They are considered more courageous than some breeds of sheep in defending themselves against the attacks of dogs or wolves.

For crossing your common sheep, where wool and mutton are desired, the Cotswold is decidedly the best

To the foregoing valuable qualities may be added that of early maturity, vigorous and hardy constitution, and that the ewes are prolific breeders and good nursers, yielding an abundance of milk.

HISTORY.

The Cotswold breed of sheep has an ancient history,—its popularity dating as far back as the twelfth century.

Mr Mattocks says that "the exportation of Cotswold sheep from England was early prohibited, except under the Royal license; and although this restriction was afterwards removed, yet the effect was in producing a fixed race of great value."

They originally attracted attention on account of their large yield of wool of a very long staple. They have always been noted for their ability to endure cold weather. So much does this characteristic predominate, even at the present day, that no hard treatment will tell upon their constitution so rapidly as the mistaken zeal of some breeders, especially in this country, which confines them to close, ill-ventilated sheds or barns in winter

Coleman claims that the Cotswolds are the largest breed of domesticated sheep in the world

This breed of sheep was in demand for exportation from England as early as in 1467, in which year application was made to King Edward IV. for ' license to pass over certain Cotswold sheep into Spain '

The sheep take their name from the "cots," or sheds in which they were usually sheltered from inclement storms in the winter, and the "wolds," or open hilly ground on which they were pastured in the winter.

The large number and popularity of the sheep raised on the hills in Gloucestershire, England, where this breed of sheep was improved, has given it the name of Cotswold Hills

WOOL.

For over four hundred years (1464), the wool of Cotswold sheep has been held in great esteem, and has generally commanded a high price.

Combing wools are used in shawls fancy knit goods, ladies' fancy cloakings, serges, moreens, alapacas, cloth lining, mohair lusters, lastings, damask for furniture, furniture coverings, curtains, webbing for reins, girths, suspenders, flags, military sashes, cord and tassels, nubias, braids, bindings, &c , &c.

An authority says "New and beautiful styles of ladies goods command the admiration and patronage of the fashionable world, and invention is almost equally rife in the production of fancy goods from long wool for gentlemen The high price of Cotswold wool should not be deemed extravagant, in view of the fact that the shrinkage in scouring is but 18 to 20 per cent., while the waste in Merino wool ranges from 40 to 70 per cent.

"A pound of average Cotswold fleece will make as much scoured wool as two and one-half pounds of Merino, which shrinks 68 per cent "

Eighteen to twenty-two pounds of unwashed wool has been sheared from good specimens and the long and abundant fleece is rich in all the most valuable qualities of long wool—length, luster, crimp and style.

MUTTON.

Breeders of Cotswold sheep are compelled to accede preeminence to the Southdown for superior quality of mutton.

There is no doubt but what the Cotswold breed of sheep may be improved by careful and continued selection until it would nearly approach the popular standard for lean, well flavored, juicy mutton and at the same time the large size, weight of fleece and other excellent qualities retained that have made the Cotswold sheep popular for centuries for improving nearly all the recognized large breeds of long and middle wool sheep.

Practical and unprejudiced breeders will give preference to such breeds as promise the best returns for the capital and labor invested.

The large number of flocks of this breed of sheep found in all portions of the United States, is good evidence of the profit attending the breeding of the Cotswold sheep.

Standards are determined largely by the changing market, or the style of wool or quality of mutton that will bring the most money is the criterion that will influence the majority of sheep owners.

The breeder makes a fatal mistake in trying to make one breed of sheep excel in every particular Soils and markets in various localities are especially adapted to some of the well established types.

The rolling prairies of Illinois seem especially adapted to the Cotswold sheep, which are noted for quick growth and comparative hardiness.

There is an increased demand for Cotswold sires, for grading up the numerous flocks of small native sheep.

The objection frequently urged against this breed of sheep, on the ground that they do not flock or herd well together, is not applicable to other than large unenclosed ranges, where it is doubtful there ever was a flock of Cotswold sheep of any considerable size.

The habit of the Cotswold sheep of scattering over the pasture is not only of advantage to the flock in giving each animal untrodden grass that has not been soiled by a compact flock of sheep passing over the ground but the range is evenly grazed and the droppings more uniformly distributed

COTSWOLD CROSSES

The Cotswold breed of sheep has been more frequently used in developing the new candidates for public favor of the long wool types than any other breed for the reason that no better cross could be made where both quality of mutton large size and heavy fleece of combing wool are desired

Spooner, an English authority speaking of the Cotswold breed in his work on Sheep says "They have also been used in crossing other breeds as before noticed and have been mixed with the Hamsphiredowns

'It is indeed the improved Cotswold that under the term new or improved Oxfordshire sheep are so frequently the successful candidates for prizes offered for the best long wooled sheep at some of the principal agricultural meetings or shows in the kingdom The quality of the mutton is considered superior to that of the Leicester tho tallow being less abundant with a larger development of muscle or flesh We may therefore regard this breed as one of established reputation and extending itself throughout every district in the kingdom'

On page 62 of Randall's Practical Shepherd we find that the Cotswold has played an important part in the formation of the Shropshiredown sheep which is now one of the most popular middle wool breeds of sheep Speaking as far back as 1856 of the more common sheep this standard work says

'As the country advanced and the breeds became valuable for their carcasses as well as for their wool the more common sheep were crossed with other breeds but more particularly with the long wooled Leicesters and Cotswolds or short wooled Southdowns

Mr Spooner gives the Cotswold breed credit for improving the Hampshire downs He says 'If then we were asked what original blood predominated in the Hampshire sheep we should unquestionably say the Southdown, but if the further question were put is the present breed derived from the Southdown and the original Hampshire alone we should express a doubt as to such conclusion as there is good reason to consider that some improved Cotswold blood has been infused

We find the following quotation on page 47 of Randall's Practical Shepherd 'The occasional introduction of a little Cotswold blood into a Leicester flock has the effect of improving both the constitution of the animal and also the hind quarters

Other authorities might be referred to if necessary to convince the shepherd desirous of a large mutton sheep well covered with a heavy fleece of combing wool of superior excellence that the Cotswold breed for long wool and mutton is not surpassed

AMERICAN COTSWOLD ASSOCIATION

A paper of this character would not be complete without reference to the American Cotswold Association an organization incorporated under the laws of the State of Illinois

This Association is managed by the leading breeders of Cotswold sheep in the United States and Canada

The object of the Association is 'the collection revision preservation and publication of the history and pedigrees of pure bred Cotswold sheep'

The association has issued two volumes of the American Cotswold Record and done much important work in encouraging breeders to strive for better results as well as in calling the attention of the public to the good qualities of this breed of sheep

The following is a list of the officers of the Association The standard of excellence and scale of points for Cotswold ram and ewe adopted by the Association is also given

Incorporated under the laws of the State of Illinois

AMERICAN COTSWOLD ASSOCIATION.

OFFICERS.

President—T L Miller, Beecher, Ill.

Vice-Presidents—John C Snell, Edmonton, Ontario, Chas T Mattocks, Portland, Me, Robert C Estill, Lexington Ky

Secretary and Treasurer—Chas P Willard Chicago, Ill

Board of Directors—Samuel E Prather Sherman Ill, Chas A De Graff, Janesville, Minn, Chas F Mills, Springfield Ill; T L Miller, Beecher Ill Chas P Willard Chicago, Ill

Standard of Excellence and Scale of Points for Cotswold Ram.

	Points.
Head not too fine; moderately small, and broad between the eyes and nostrils, but without a short thick appearance, and in young animals well covered on crown with long, lustrous wool	8
Face, either white, or slightly mixed with gray or white, dappled with brown.	4
Nostrils wide and expanded. Nose dark	1
Eyes prominent, but mild looking	2
Ears, broad, long, moderately thin, and covered with short hair	4
Collar full from breast, and shoulders tapering gradually all the way to where the neck and head join. The neck should be short, thick and strong, indicating constitutional vigor, and free from coarse and loose skin	6
Shoulders broad and full, and at the same time join so gradually to the collar forward and chin backward as not to leave the least hollow in either place	8
Fore-legs—The mutton on the arm or fore thigh should come quite to the knee. Leg upright with heavy bone— being clear from superfluous skin, with wool to fetlock, and may be mixed with gray	4
Breast broad and well forward. Keeping the legs wide apart. Girth or chest full and deep	10
Fore-Flank quite full, not showing hollow behind the shoulders	5
Back and *Loin* broad, flat and straight, from which the ribs must spring with a fine circular arch	12
Belly straight on underline	3
Quarters long and full, with mutton quite down to the hock	8
Hock should stand neither in nor out	2
Twist, on junction inside the thighs, deep, wide and full, which, with a broad breast, will keep the legs open and upright	5
Fleece.—The whole body should be covered with long, lustrous wool	18
Total.	100

Standard of Excellence and Scale of Points for Cotswold Ewe.

	Points.
Head moderately fine, broad between the eyes and nostrils, but without a short, thick appearance, and well covered on crown with long, lustrous wool	8
Face, either white, or slightly mixed with gray or white, dappled with brown	4
Nostrils wide and expanded. Nose dark	1
Eyes prominent, but mild looking	2
Ears broad, long, moderately thin, and covered with short hair	4
Collar full from breast, and shoulders tapering gradually all the way to where the neck and head join. The neck should be fine and graceful, and free from coarse and loose skin	5
Shoulders broad and full, and at the same time join so gradually to the collar forward and chin backward as not to leave the least hollow in either place	8
Fore-legs.—The mutton on the arm or fore thigh should come quite to the knee. Leg upright, with heavy bone—being clear from superfluous skin, with wool to fetlock, and may be mixed with gray	4
Breast broad and well forward—keeping the legs wide apart. Girth or chest full and deep	10
Fore-Flank quite full, not showing hollow behind the shoulder	4
Back and *Loin* broad, flat and straight, from which the ribs must spring with a fine circular arch	12
Belly straight on underline	5
Quarters long and full, with mutton quite down to the hock	8
Hock should stand neither in nor out	2
Twist, or junction inside the thighs, deep, wide and full, which, with a broad breast, will keep the legs open and upright	5
Fleece.—The whole body should be covered with long, lustrous wool	18
Total	100

ILLINOIS TILE-MAKERS' ASSOCIATION.

THIRD ANNUAL MEETING.

OFFICERS, 1881.

President—R. C. Straight .... Fairbury
Vice-President—J. M. Pinkerton .... Smithville
Secretary—T. D. Spaulding .... Gibson City
Treasurer—John McCabe. . ... .Rushville

ROOMS DEPARTMENT OF AGRICULTURE,
SPRINGFIELD, ILL., Jan. 18, 1882.

The meeting was called to order at 10 o'clock A. M.

The President, J. K. Reader, being absent, Vice-President A. H. Staats was called to the chair.

J. J. W. Billingsley was made Secretary *pro tem.*

Motion of J. C. Straight carried, that a committee be appointed to prepare a programme for the meeting.

Chair appointed as said committee, Messrs. J. C. Straight, J. M. Pinkerton, John McCabe, D. Vanhise and George S. Tiffany.

On motion, the Association adjourned to meet at 2 o'clock P. M.

AFTERNOON SESSION.

The Association met pursuant to adjournment.

The Committee on Programme made the following report, which was adopted:

To the President Illinois Tile-Makers' Association:

The following programme and order of business is recommended:

Report of Secretary and Treasurer.
Election of officers.
Paper—Engineering and Laying Tile, by Prof. I. O. Baker, Industrial University, Champaign.
Paper—C. G. Elliott, Road Draining.

Discussion—Clays How to increase the demand for Tile
Discussion—Construction of Kilns
Respectfully submitted

J C STRAIGHT
J M PINKERTON,
JOHN McCABE,
D VANHISE,
GEORGE S TIFFANY
Committee

The Treasurer made the following report, which was adopted:

Illinois Tile Makers Association

In account with JOHN McCABE Treasurer

	Cr	
By balance in Treasury		$25 25
membership fees		28 00
	Dr	
To expenses printing etc	$18 20	
balance in Treasury	35 05	
	$53 25	$53 25

I certify that the above is correct

JOHN McCABE Treasurer

The Association then proceeded to the election of officers, with the following result

President—R. C Straight	Fairbury, Ill.
Vice-President—J. M. Pinkerton	Smithville, Ill.
Secretary—T D. Spaulding	Gibson City, Ill.
Treasurer—John McCabe	Rushville, Ill.

The following gentlemen paid their annual dues and were enrolled as members

James M Bourne	Springfield, Illinois
J J. W. Billingsley	Indianapolis, Indiana
George Clark	Low Point, Illinois
T. E. Chandler	Indianapolis, Indiana
H M. Clark	Covington, "
Frank Darst	Eureka, Illinois
George T. Eastes	Danville, Indiana
Eggleston & Spaulding..	Gibson City, Illinois
S D Fisher	Springfield, "
A. Gooding	Belleville, "
J W Green	Dayton, "
W A. Griffith	Minier, "
S. Hugenberger.	Buffalo "
R. M. Kerns.	Milo, "
J. Lehman.	Marseilles, "
D. O. Loy.	Monticello, "
John McCabe.	Rushville, "
J W. Miller.	Kansas, "
Charles F. Mills	Springfield, "
C. C. Merrill.	Mount Pulaski, "
J. M. Pinkerton	Smithville, "
Oscar Pinkerton	Low Point, "
T. D. Spaulding	Gibson City, "
Charles Stookey.	Belleville, "
A. H. Staats	Cornell, "
D. W. Stookey.	Buffalo, "

R. C. Straight.	Fairbury, Illinois
J. L. Turner	Taylorville, "
D. Vanhise.	Mount Pulaski, "

The large number of tile manufacturers present from this and adjoining States, not members of the Association, were invited to participate in the discussions.

The different kinds of clay were discussed and their adaptability to the manufacture of tile.

Mr. A. H. Staats, of Cornell, exhibited sample of clay which he said he had no trouble in drying or burning

Mr. John McCabe, of Rushville, Illinois—I have worked clay all my life and have yet much to learn about it. Do not think fire clay will make good tile. Your attention is invited to several samples of various kinds of clay. I am of the opinion that any clay will glaze if brought to the right heat, but do not consider tile any better on account of glazing. To salt glaze, when the tile are ready to stop burning, I throw salt in on the tile and close up the kiln.

Mr. George T. Eastes, of Danville, Ind., said that it was hardly possible to determine as to the superiority of clay. It involves the manner of handling the clay until it is made into tile.

Mr. Tiffany—I suppose the distinction intended by the term fire clay is between stoneware clay and common clay. Fire clay will not vitrify with high heat. Either of the clays, common or stoneware clays, are good enough; common clays will hardly bear a heat to vitrify and glaze; stoneware clay will glaze. Tile glazed by using a wash of lead adds nothing to the durability. It does not affect the body.

Mr. John McCabe—My tile on exhibition is salt glazed from common and fire clay.

Mr. Tiffany inquired why Mr. McCabe used both kinds of clay.

Mr. John McCabe—I commenced mixing the clays and found it worked well, and would like to have Mr. Tiffany's views as to whether it is best to mix the two kinds of clay.

Mr. Tiffany—I do, the fire or potters clay will hold up the common clay until it vitrifies, making a good body.

Mr. McCabe—That is my experience.

Mr. Tiffany—The color of clay has nothing to do with the quality of clay.

Mr. McCabe—All white clay with us is called fire clay. I do not know why.

Mr. Messenger—My experience is that common clay mixed with potters clay is the best for tile. By mixing potters clay with common clay prevents cracking.

Mr. McCabe—I have had considerable experience in burning brick. We get our best clay for brick on barren lands or whitish clay; can do nothing with joint clay.

Prof. I. O. Baker, of the Illinois Industrial University at Champaign, read a paper on engineering and laying tile.

On motion, adjourned to 7:30 o'clock, P. M.

EVENING SESSION.

The Association met as per adjournment, President R. C. Straight, of Fairbury, in the chair.

C. G Taylor, Esq , of Tonica, Ill., read a very interesting paper on "Road Drainage,' which elicited much discussion

A vote of thanks was tendered Prof. I. O Baker and C. G. Elliott for interesting papers, which were ordered printed with the proceedings of the meeting

On motion, adjourned to 9 o'clock, A. M , Wednesday.

WEDNESDAY MORNING.

The Association met as per adjournment.

Called to order by the President, R C. Straight.

Minutes of yesterday's session read and adopted.

Motion carried that the President appoint a committee to prepare a programme for next annual meeting

President appointed as said committee, Charles F. Mills, of Springfield, T. D Spaulding, of Gibson City, and J. M. Pinkerton, Smithville.

The further consideration of the question, "How to increase the use of tile,' was resumed

Mr. Billingsley said there were some questions in this connection deserving consideration

1. The importance of farm drainage, and the consequent importance of the tile manufacturing.

2. The extent of the business.

Illinois has, it is estimated, 32,000,000 acres of land adapted to agricultural purposes, three-fourths of which would be benefited by tile drainage, but suppose we say that only one-half needs draining badly, then we have 16,000,000 acres. To thoroughly drain this amount of land—and it will be done at no late date—would require a vast amount of tile. Drains, placed at a distance of four rods apart, would require five hundred factories, with an average annual capacity of 200,000 tile, over one hundred years to make the amount of tile necessary to drain the 16,000,000.

3. The benefits to be derived from drainage on the investment is estimated all the way from 25 to 100 per cent. annually. Horace Greeley is reported to have said that he who causes two blades of grass to grow where only one grew before, is a public benefactor. If that be true, what shall be said of him who improves land that is otherwise worthless, and makes it produce an average of seventy-five bushels of corn per acre. May we not call him a greater benefactor? If by tile draining we may increase the agricultural products of the country 25 to 50 per cent., the aggregate increase of wealth to a State would be wonderful; an increased wealth which would not only add to the general prosperity of the State, but help to bear the financial burdens of the National Government. If the man who uses tile is so justly entitled to the name benefactor, may we not likewise say the same of the manufacturer of tile?

Gentlemen of this convention, you have a just right to be proud of your calling. You are not only laboring for the good of this generation, but your labor will bless those to follow. The men who succeed in life must have a pride in their business.

The question before us is, how shall we increase the demand for tile. As a rule, men do not invest their money in any business unless they are convinced that it will pay. If there are localities where they need to buy tile and do not, you may be assured that they are not fully informed as to the benefits to be had from drainage. Then how shall he learn? Let all manufacturers become, in a sense, teachers. First, fully inform yourselves as to the benefits, and then carry the facts upon your tongues' end; talk about it at home and abroad; be ready to answer all questions as to how the work should be done.

Another way to encourage an increased demand for tile is to make good tile, and sell only good tile. It is very discouraging to the use of tile for the most convenient factory in any locality to have the reputation of making bad tile. It will greatly increase the demand if your customers know that they can get good tile at economic prices. Another way to increase the demand is to place in the hands of those who use or should use tile, the necessary reading matter as to the benefits of farm drainage. Farmers may not believe at first all that is printed on the subject, but continue to furnish the information, and by and by they cannot withstand the facts. As they pass about their farms they will be planning how they may drain in spite of themselves. Some men are slow to spend money in extending their trade, and apparently fail to learn from the example of others. Suppose you have a small trade which yields only a living for yourself and family. and little beside; now, if you expend $50 a year in placing into the hands of your customers the necessary reading matter to educate them up to a just estimate of the importance of draining their land, and follow it up for three or four years, and in the meantime build up your trade to double its proportions when you commenced, would you not say it paid to educate your trade. You may do much in this way to advance the interest of tile drainage by having your local press publish from time to time short articles on drainage, the experience of parties known to the readers. I hardly know what 300 tile makers in Illinois may not do to increase the demand for tile if they will sow broadcast in this way the necessary reading matter to educate their trade up to a full knowledge of the benefits to be derived from the use of tile in the drainage of their farms.

Mr. Elliott—I knew a man a few years ago who sent out circulars and reading matter to his customers and built up a large trade.

Mr. McCabe—I agree with Mr. Billingsley. I commenced making tile with an experienced man. I furnished the money and he the experience, and we made poor tile, and sold some of them, and we have hardly got over it yet. I bought 25 copies of the Drainage Journal, and it has been a great benefit to me, notwithstanding the past season has been dry, and it promises much more in the future. One circumstance occurred in our neighborhood, which has added much interest to farm drainage. A young man who had 40 acres of wet land, that had never produced a crop, became interested in drainage and drained the forty acres, and the past season produced an average of 70 bushels of corn per acre.

Mr. T. D. Spalding—I sell a well-burned, crooked tile at half price. Soft tile I do not sell at all. There is nothing in the color of tile.

Mr. Geo. T. Eastes—The trouble in many instances in tile not giving satisfaction, is on account of bad outlets.

Mr. T. E. Chandler- Many farmers do not know the benefits of farm draining. Tile-makers would do well to send out circulars. I was much interested in an address of Mr. Billingsley, the editor of the Drainage Journal, on the effects of drainage upon the soil, delivered before the Indiana State Agricultural Society, which I think ought to go into the hands of every man who uses tile.

Mr. McAllister—The tile in Illinois are not well laid which are laid in water. If farmers could get the idea that water is not needful in digging ditches, then draining might be done at any time of the year. I think that tile manufacturers ought to get some man in the neighborhood to drain a small piece of land thoroughly, that the neighbors could see the benefits. I think that farmers ought to get beyond draining only ponds and sloughs. A Scotchman told me that in Scotland they would borrow money to drain, when they would not borrow for any thing else. The Scotch drain hill land for aeration, that is, to get the air into the soil. I have a ditching-machine, with which the work may be done very rapidly and well, the use of which will increase the demand for tile. Drained lands are not only more productive, but more healthy. Cattle pastured on wet land will not get fat. Hay from low, wet lands may look as well, but is not as good as that grown on drained land. Corn is better and wheat is better.

The question of the construction of kilns was then taken up.

John McCabe, of Rushville—I favor a round, down-draft kiln. Have tried the up-draft, but do not like it. My kiln hold 18,000 feet of tile. We have good success and control it at will.

Mr. Pinkerton asked Mr. McCabe which he considered best.

John McCabe—It depends upon the manner of construction. My kiln is lined with fire brick.

W. A. Glotfelter—I have been in the tile business for six years, and have tried up-draft, and would quit if I had to use it. I used brick for floor for two years. I now use four-inch tile for bottom, set on one end, and set tile on top of them, and have used them ever since. Use twelve cord of wood to 15,000 or 20,000 tile.

John McCabe—I think the tile bottom a good suggestion. I believe coal cost six cents per bushel; use $15 worth of fuel for 16,000 to 18,000 tile. My stack is twenty-four inches square inside. I hold the white heat ten hours before closing the kiln. Burn in from forty-eight to sixty hours.

Mr. Pinkerton—Is it better to have two small kilns or one large one of the combined capacity of the two smaller?

Mr. Glotfelter—My kiln cost me $900.

Frank Darst, of Eureka—For my use, I prefer small kilns. I load tile right into the wagon. My kiln was 16x24 feet. I cut the kiln in two parts and prefer them.

J. W. Green, of Dayton—Is the expense less by having two small kilns?

(A voice)—One is the cheapest.

The next topic discussed was how to build winter tile factory.

D. O. Loy, Monticello—I have been making tile this winter; dry with steam; use gas-pipe. I have not gone far enough to say it will pay. I am not making tile at this time, on account of the extreme cold, but shall commence in February. I think the drying by steam is a success. I use the common clay. I have a double plank wall filled in with dirt.

C. C. Merrill, of Mount Pulaski—I built the works at Lincoln. They are upon the same plan as Mr. Loy's. We exhaust steam. Our floor is slatted with pipes under the floor; tile dry on end; use down-draft kiln; would not use up-draft; use half a ton of coal to 1,000 tile. I would use potters clay if I had it, and common clay with it.

Mr. Tiffany—I think we ought to determine what amount of pipe we should have to the number of feet in the floor and the heat that should be maintained.

D. O. Loy, of Monticello—I have 1,800 feet of floor, which should have 15,000 feet of pipe.

Mr. Glotfelter—I visited the tile yard at Lincoln and found the pipe laid a foot apart. They had an iron roof, and the water would form on it and drip on the tile. It was found necessary to construct ventilators.

The next topic discussed was the preparation of clay for manuturing tile.

John McCabe, Rushville—I dig my clay in the fall, and weather it through the winter; think it better than to crush it; have no stone in my clay.

Mr. Tiffany—Do you think by so doing you could dispense with the use of the crushers?

Mr. McCabe—I think so, if there is no stone in the clay.

D. O. Loy—I can use my clay only two spades deep; have thought of getting crushers and work my clay deeper; have a sixteen horse power engine.

Frank Darst—The gentleman will have to get a larger engine, but I would not be without my crushers.

W. A. Glotfelter—I throw off two spades of top soil, then use six feet of clay; I have tried freezing and I find no advantage; my clay is pretty dry in the latter part of the season.

The next question discussed was, "Best mode of handling tile from the mill to the kiln."

Mr. McCabe—I handle tile with barrows.

A. H. Staats, of Cornell—I have track from mill to kiln; use cars, and find it much less labor than with barrows; unload kiln with wagons.

D. W. Stookey, Buffalo—We use portable cars and track; think it best.

D. O. Loy, Monticello—Think trucks the most economical way of moving tile.

A paper on the "Benefits of Farm Drainage," by J. J. Taylor, of Fairbury, was read and ordered printed with the proceedings.

On motion, adjourned to one o'clock P. M.

AFTERNOON SESSION.

Association met as per adjournment.

President Straight in the chair.

The question of setting tile in the kiln was then discussed.

T. D. Spalding, of Gibson City—I had an experienced man who set 4s in 9s, 6s in 8s, 2½s in 4s, and they cracked badly. Since, I set 3s in 6s, 4s in 7s, 5s in 8s, and succeed well.

John McCabe, of Rushville—I do not nest tile any more, except 3s in 6s and 2½s in 5s, sometimes; they do not glaze well.

A. H. Staats, Cornell—I have nested them as first described, with success.

Mr. Tiffany—What is the cause of cracking?

Mr. Glotfelter—I have noticed in nesting tile that if a tile is set against one side, a crack is likely to follow.

Mr. Tiffany—With sewer pipe, if a large pipe is set against the wall, it cracks.

Mr. Pinkerton—We can't in my clay nest anything in a four-inch tile, and sometimes not in a five-inch; can set 5s in 8s, but if we set anything inside the 5s we lose the 8s.

Mr. Glotfelter—I set the large tile on top of kiln.

A. H. Staats—Cornell, Ill. We fill kiln as full as possible, and have no trouble except with the fires. A green tile set in a dry one will crack the dry one.

Mr. Dawson—My tile do not crack unless I nest too close. I place the large tile near the fire; they need to be burned harder. In midsummer I have no trouble from cracking, hence I think it is caused by too much moisture. I find sometimes, when the tile are too moist in spots it makes an uneven draft in the kiln.

Mr. Tiffany—I found with up-draft kiln that I lost more large tile at the bottom than at the top. I attribute it to the currents of cold air, so I use small tile at bottom.

John McCabe, Rushville—I set in up-draft kiln the small tile at the bottom to prevent cracking, and in down-draft I practice the reverse.

T. D. Spalding—How can you tell when your tile is sufficiently burned?

Mr. Glotfelter—When I get the white heat, I burn twelve hours longer.

D. O. Loy—In burning down-draft kiln I look down through the tile to the bottom; if they are white I am done burning. I use trial pieces sometimes.

John McCabe—I have "try-holes" through which we examine try pieces at different heights.

D. O. Loy—Some clays need the white heat longer than others.

The next topic discussed was, What percentage does tile draining pay?

Mr. Billingsley—In making up a statistical report of the tile business, among other questions asked was:

What per cent. on the investment does drainage pay? The reports range from 25 to 200 per cent. Some reported all gain; that worthless lands were made to produce large crops by drainage.

Mr. Tiffany—The sanitary benefits have not been named. I would like to have a paper on that point in your programme for the next meeting. We are the St. Patricks of this age, so far as driving out the snakes and frogs.

John McCabe—My customers say drainage pays from 50 to 100 per cent. There is no question of its paying with those who know the effects of drainage upon the soil.

Mr. Stookey—Why limit the per cent.? in a great many cases it is an infinite per cent., or total gain.

John McCabe—A man raised 350 bushels of potatoes on land which was worthless before it was drained.

James M. Bourne, of Springfield—Dr. John McGinnis, of Dawson, Sangamon county, Illinois, drained about eighty acres of land in the spring of 1881. Sixty acres of this field was cultivated by a tenant the past season, and the doctor says that each acre produced 35 bushels more corn than the best crop which had been produced in any of the five preceding years. This crop could have been sold at 35 cents per bushel, and allowing three cents per bushel for gathering the corn. If such expense should be taken into consideration, would produce a clear gain of $11 20 per acre. The cost of draining each acre was $8 90, so that the increased yield was an interest of 125 per cent. for the first year.

Mr. Bourne introduced the following resolution:

Resolved, That the name of this Association be changed, and that the organization be in the future known as the Illinois Drainage Association.

D. O. Loy, Monticello—I am not in favor of changing; the name is already broad enough. I am in favor of inviting farmers and all interested.

President Illinois Tile-Makers' Association.

The Committee on Programme would recommend the following topics for discussion at the next meeting of the Association, and the arrangement of business as named below:

The first forenoon of the meeting, to be occupied in receiving reports from all present, as to the interest in tile draining in their respective localities.

The afternoon session in receiving reports of Secretary and Treasurer, and the election of officers for the ensuing year.

Paper by Prof. Weber, Champaign.
Character of clay.
Discussion

Evening Session:
Manufacturing tile.
Construction of shed and method of handling tile from mill to shed—J. Jackson, Millington, Illinois.
Construction of Kilns—G. S. Tiffany, London, Canada.
Best method of drying tile by artificial heat—C. C. Merrill, Mount Pulaski, Illinois.
Best method of burning tile—M. Dawson, Lawrence, Indiana.
Best method of tempering clay—F. Darst, Eureka, Illinois.
Utilizing heat of one Kiln to water smoke an adjoining Kiln—John Fernald, Frankfort, Indiana.

Morning Session:
How to increase the demand for tile—S. T. K. Prime, Dwight, Illinois.
Sanitary influence of drainage—Dr. J. M. Gregory, President State Board of Health.
Benefits resulting from farm drainage—J. J. Taylor, Fairbury, Illinois.

Afternoon Session:
Will it pay to drain hard-pan sub-soil—E. P. Smith, Muncie, Indiana.
Road drainage—Geo. P. Ely, Bloomington, Illinois.

Evening Session:
Tile, brick and ditching Machines.
General discussion.

Will not any prairie clay make good tile that will work smooth and burn hard enough to have a metallic ring; introduced by Mr. Loy, Monticello.

Respectfully submitted,

CHARLES F. MILLS.
T. D. SPALDING.
D. VAN HISE
Committee.

On motion, the report was received and adopted, and the committee continued, with power to add other topics or questions for discussion to the programme, and make necessary arrangements for the next annual meeting.

The following resolutions were unanimously adopted:

Resolved, That the thanks of the Illinois tile-makers are due and hereby tendered to the following railroads, granting reduced rates to the members of the Association, viz: Chicago and Alton, Wabash St Louis and Pacific, Illinois Central, Springfield and Northwestern, and the Ohio and Mississippi.

Resolved, That the thanks of the Association are extended to Hon. S. D Fisher Secretary Illinois State Board of Agriculture, for the substantial aid rendered the Tile-Makers' Association, in making the meeting both pleasant and beneficial to all in attendance.

Resolved, That the Illinois Tile-Makers' Association recommend to tile manufacturers and farmers the *Drainage Journal*, published at Indianapolis, as an able and practical journal devoted especially to the interests of drainage and worthy the liberal support of the members of this convention

Adjourned to meet in Springfield the second Tuesday in January, 1882.

R. C. STRAIGHT, *President*.

T. D. SPALDING, *Secretary*.

BENEFITS OF TILE DRIANAGE.

BY JOHN J. TAYLOR, FAIRBURY.

GENTLEMEN I have been requested by some of the farmers in this part of the country to write a short article on the benefits of tile drainage, and as I have had probably as much experience as any other person in this section, I have consented to briefly give the results

In the year 1876 I took charge of a tract of 900 acres of land, nearly adjoining this town and owned by a gentleman in New York. He desired me to direct the improvements with the view to make it productive, as it was very much run down, and needed drainage before any farmer could expect to succeed in raising crops.

In the fall of 1866 I had a large open ditch cut through the tract, and had some smaller open ditches leading into it I found that these small ditches with all that I could do, would be filled with trash and mud in the early spring, when it was most necessary to have the ground dry and where it was springy and spouty it had failed entirely, for when ditches enough had been put in they were too near together to enable the plowman to cultivate successfully.

About this time I had read an article on the benefits of drainage, and procured a few wagon loads of tile, and put them in very carefully The results surprised me, and I therefore resolved to follow it up and have since had the tile put in all the sloughs, ponds and springy places on the whole tract, so that last season, although it was very wet in the spring and early summer, I had every rod of the land, except that occupied by the large open ditch, in grain A great deal of this land was very wet indeed, originally some cattail springs, some mirey, springy sloughs and my best crops were in the originally poorest and most worthless lands The operations and effects of tile drainage in this tract of land have been watched by many of the farmers in this vicinity, and all the progressive ones have commenced the work of tile drainage in earnest, as they have become fully satisfied that no farmer, who has wet land, can afford to let it lie, and pay taxes, without making it productive. The great demand for tile proves how earnest and zealous they have become. In the year 1877 Mr R C Straight started tile works on a small scale, using horse-power. He has since largely increased his works and uses steam-power, and fails to supply the demand, although last season he manufactured in length very nearly 150 miles of tile, from three inches to eight inches in size.

I will close by stating one of the reasons that caused me to push the drainage to completion on the 900 acres so soon A gentleman from the northern part of the State said to me that there was a colony of thirty Scotchmen who would borrow money at ten per cent. interest for tile drainage, but not for any other purpose.

IMPROVEMENT OF PUBLIC ROADS BY TILING.

BY C G ELLIOTT TONICA ILLINOIS

Roads have always been regarded as accurate tests of the degree of civilization existing in a country These improvements keep pace with the advances of the nation in numbers wealth industry and science, affording to the historian an evidence of progressiveness in all those things which go to make up the financial prosperity of a people The nations of the old world having had time experience and wealth can show us what good public roads ought to be They had and still have the material for good roads and the power to use them We in this country and especially in the West are restricted in regard to both We wish to offer a few suggestions upon the subject of roads upon prairie soil for from the settlement of our State until the present time our people especially the farming population have been struggling with earth and water in the vain attempt to construct passable roads For material we have the soil in all its virgin purity and nothing more However desirable stone and gravel may be for the building of wagon roads, it is evident that our roads must be constructed of soil as we find it except, perhaps, near large towns and on thoroughfares sustaining very heavy travel

OUR ROADS AS THEY ARE

All that has usually been done to our roads in the way of improvement has been to make sloughs, ponds and swamps passable In the case of a slough we have a plank culvert giving the water a passage-way as nearly as possible in the line of its natural course The center line of the road is then picked up by removing the earth from either side until deep ditches are excavated and an embankment ten or twelve feet wide and two or three feet high is made for a road track When the frost comes out of the ground and spring rains set in, what is the result ? If the surface of the road track was wet when it was last frozen it becomes muddy at the first thaw and continues so the mud getting deeper and deeper until the frost is all out and the drying process begins In the meantime rains set in usually before the frost is out and the water running from the road embankment and the surrounding fields quickly fills the large ditches left at the sides of the road track These ditches are nearly always left lower than any outlet The culvert gives these ditches free communication with each other allowing the water to run back and forth thus keeping it the same height in both ditches The surface of the road track having been ruined by frost and rains the foundation of the road bed is rapidly saturated by the water standing on either side When the embankment has become filled with water and the surface crust is broken up the 'bottom falls out and the road is a mass of puddled soil The embankment that cost so much work to construct and promised when dry a good roadway being now in a plastic condition begins to spread out at each side and flatten down under the travel In May or June after evaporation of water has gone on for a month or two, the road embankment is found reduced to one-half its original height and much flatter wider and rougher than ever before At the annual road repairing season which occurs with the regularity of Aunt Chloe's 'cleaning up time' more loose soil is put on the road bed and the same process is reported from year to year This is a true picture of prairie roads and the way in which they are managed

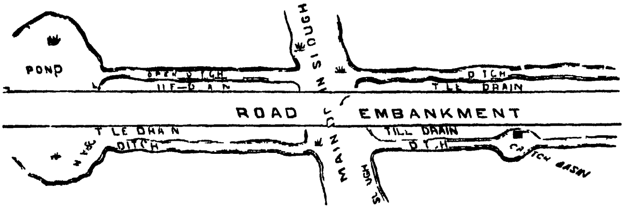


FIG A —Plan for improving or road embankment by the use of tile drains

THE ESSENTIALS OF A GOOD ROAD

The object to be sought in a road is a hard, smooth surface impervious to water McAdam, the English engineer and famous road builder constructed his roads by first thoroughly draining the road-bed, then it was properly shaped and sloped from the center so as to discharge what water might penetrate to it Upon this was placed the broken stone by a method peculiar to himself We may place thorough drainage as being both figuratively and literally speaking, at the foundation of good roads, especially in the West.

HOW TO IMPROVE A ROAD

In draining for a road we have a different object in view from the one had when land is drained for farming purposes. In roads we care nothing for warmth of soil, porosity or any other quality which fits a soil for producing crops We wish to remove the water from in and around the embankment, and keep it away In times of large rainfall we must remove the water with the greatest possible rapidity It has been proven by sufficient trials that the use of drain tiles is of the utmost advantage, in short, in accomplishing these objects under-draining is the key to successful road-making over the land. As with everything else, there is a right and a wrong way of doing this, and it is poor economy to do poor work on a public road in order to save a few dollars. We will suppose that we have a piece of road to improve which has been worked similarly to the one already described,—that is, an embankment has been made with large trenches on either side. We must first obtain a good outlet down the natural water course. This may be done by an open ditch if the course is large, or by tiles when small. It is usually the case that this outlet must be obtained by going through a farm adjoining the road. The owner of the farm and the road authorities should unite in some way so that the outlet may be obtained. Place a line of tile close to the lower edge of the embankment (Fig. A), at a depth of from 2½ to 3 feet. To do the work thoroughly, a line should be placed on each side of the embankment. These lines should be laid very accurately, and upon a true grade. If it is possible, the drain should have a grade of at least 2 to 4 inches in 100 feet. The important thing to look after is the rapid removal of the water. This necessitates the most accurate work in laying the drain, and also larger tiles than would be sufficient to drain the same area of land for farming purposes. If there are small sags communicating with the road ditches, branch lines should extend to them so that they may not overflow and discharge large quantities of water into the road ditches (Fig. B). Should there be a hollow along the line of tile, a catch-basin will facilitate the removal of the water. This is a pit two feet square, dug as deep as the tile are laid. After the tiles are laid the pit is filled with gravel and small stones. The object of this basin is to take the water which gathers so quickly in such places, and give it a rapid ingress to the tile.

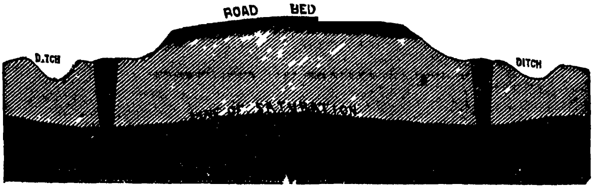


FIG. B.—Cross section of road, with tile drain.

ACTION OF TILE DRAINS UPON ROAD.

The drains keep the embankment firm by preventing water from soaking into it from the bottom and sides. The whole embankment is kept dry except a small portion at the top. As a consequence, when the frost comes out in the spring, there is less moisture, and consequently less breaking up of the surface. It should be borne in mind that drainage does not prevent rain from penetrating the surface, making it at times soft and susceptible of being cut into ruts. This is a disadvantage peculiar to our soil. When the surface becomes "puddled," water will not pass through it. It is of the utmost importance that the surface be kept smooth and hard and sufficiently raised in the middle to allow the water to flow off. When, however, the road track becomes rutted, the clods should be crushed and smoothed down, and the surface brought to its original shape. It should be a rule that the surface of the road, when once formed, should be interfered with as little as possible, and especially by the use of new material.

CURVES, JUNCTIONS AND OUTLETS.

It is of very great importance that any change of direction in lines of tile should be made by curves, if we wish to get the benefit of the full capacity of the tiles. Even easy curves offer considerable resistance to the flow of water, when the quantity running in the tile is not great. This can be obviated by increasing the grade at the bends. Particular attention should also be given to the kind of junctions used when one drain enters another. Right-angled junction tiles should not be used. Junction should be so made that the branch will enter at an angle of about 30 degrees with the one into which it flows, or, if at a greater angle, the mouth of the branch tile should be curved.

In *Figure C are shown sections of junctions by which the truth of the above remark may be made more apparent. No. 1 is a section of a right-angled junction. Suppose that the currents meeting at A be represented by the lines a b and a d, the velocity being equal, the lines are made of equal length. Completing what is termed the parallelogram of forces, a. b. c. d. and drawing the resultant, a c, we have the direction of the current resulting from the union of the two. This resultant, it will be seen, flows strongly against the opposite side of the tile, checking the current by the friction thus produced, and also creates a little eddy in which earthy material, washed out by the drain, may be deposited. If the velocity is greater in the branch, as is very often the case, we find the resultant in the same way, by making the length of the lines representing the velocity proportional to the velocity of the current we have to represent. In the case assumed in No. 1, the resultant a e, shows that there is greater resistance offered than in the first case assumed. The best for a junction which joins a branch to a main at nearly right angles is shown in No. 2. This curves the current gradually, as it enters the main stream, uniting it with the main current in a way that accelerates it rather than retards it at the time the two unite. No. 3 shows the resultant of the two currents when they unite at an angle of 30 degrees.

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* [This article originally appeared in the "Drainage Journal," but the cut representing Fig. C could not be obtained for this publication.—SEC. BOARD.]

This junction is to be preferred in all cases where the branch is not obliged to be at right-angles. A study of these figures will show the necessity of careful attention to this subject. Outlets of tile lines if made within the limits of the road should be fully protected and so secured that there can be little or no danger of their being obstructed. I would suggest to tile manufacturers that we need what we may call an outlet tile. This should be made one inch in diameter larger than the line of which it is the outlet, and before the tile is burned holes should be pierced near one end so that strong wires can be put through them making a grating with the wires one inch apart. This will obviate the difficulty of constructing a grate to protect the outlet against the entrance of small animals at times when the water is not flowing. The outlet tile being larger than the drain gives it capacity enough to make up for the impediment to the flow caused by the iron grating.

OBSTRUCTIONS.

If the tiles are laid from 2½ to 3 feet deep and the outlet is well protected, the drain will work perfectly and for an indefinite time unless it becomes obstructed by the roots of water-loving trees. Experience thus far proves that drains are not safe near willow trees. All precautions of cementing the joints of the tile near the trees may be taken, yet in time the roots will penetrate some crack and enter and obstruct the drain. We have now mentioned some of the ways in which drain tile may be used for the improvement of roads, and also indicated some things necessary to be observed that we may receive their full benefit. We have looked at but one branch of the subject, and of the many matters to be taken into account in the practical construction of road drains we have mentioned only a few. Experience with and observations upon this method of the improvement of roads, prove to us that drainage lies at the basis of all permanent road improvement on our Illinois soil and all others similar to it. Wherever the experiment has been made and the work thoroughly done it has proved a success beyond all expectation. If the work goes on we may expect that Illinois roads instead of being the subject of just execration by our Eastern friends will be the pride of all and honor to our State.

ENGINEERING FOR DRAINAGE.

IRA O. BAKER, PROFESSOR OF CIVIL ENGINEERING, ILLINOIS INDUSTRIAL UNIVERSITY.

The time once was when the advocates of tile drainage were compelled to advance arguments to show that the water could actually get into the tiles; when this point was gained, it was necessary to explain how tile drainage benefited the land. A long list of benefits has frequently been cited. Later the question "Will it pay to bury this crockery?" was much discussed, but the demonstration by a host of enterprising Illinois farmers that it does pay and well too has settled this point to the satisfaction of all who can appreciate the fact that the world moves.

The inquiries and letters which I receive give good ground for believing that some farmers are deterred from making a beginning in this line by the imagined difficulties and intricacies of the engineering operations necessary in laying out the work. It is the purpose of this lecture to try to show that any farmer can, with instruments which he can make for himself in a few hours or can buy for a few dollars, do all the leveling or engineering work necessary for almost any if not every ditch he may desire to dig. I say this remembering that a tile drain is or should be designed to last forever or at least for a life time, and that like a chain the whole may be made almost worthless by weakness in a single point. The danger will lie in lack of care rather than the lack of knowledge.

LEVELING INSTRUMENT.

Many times the fall is so great, or there is running water in the ditch, so that a leveling instrument is not absolutely necessary, but there are times when some sort of a leveling instrument is indispensable, and many times the work can be more easily and better done by the employment of an instrument.

An ordinary carpenter's level is frequently used, by sighting over the top, but it is not very accurate when used in this way. However, it may be easily and cheaply modified so as to give sufficient accuracy for ordinary drainage. In fact, with a little care it will give surprising results. If a level is purchased for this purpose the one which shows the greatest movement of the bubble for a slight difference of level, is the best. The length of the level has but little to do with its efficiency.

In the ordinary form of the carpenter's level, it is impossible to tell when the bubble is exactly in the middle of the path. This objection may be obviated as follows: Remove the brass plate from over the vial, and rub warm beeswax, tallow or hard soap on the glass until a thin film adheres to it. Drive two nails into a bench or horizontal board nearly as far apart as the level is long, until their heads are in nearly the same horizontal line. Place the level upon these nails and mark both ends of the bubble by making a scratch in the film of wax with a pin or sharp pencil. Turn the level end for end and mark both ends of the bubble again. If the ends of the bubble come to the scratch previously made, well and good, if not, make a mark half way between each pair. Make these last two permanent by lightly cutting them into the glass with a fine sharp file. These marks are to show when the bubble is in the middle. The bubble will sometimes be a little longer or shorter than the space between these marks, but the marks will still be found to be of great benefit in bringing the bubble to the middle.

The instrument may be farther improved by adding sights, as follows: Attach a piece of sheet iron or brass to one end of the level, by two screws through a slot in the metal, allowing the latter to project about one-fourth of an inch above the top face of the level. This projecting edge should be straight, with a sligh notch in its middle. To the opposite end of the level fasten a similar piece with a small hole in it. The hole should not be larger than one-thirty-second of an inch and should be as far from the top face of the level as the edge at the opposite end. Since it is quite difficult to do this a method of adjusting the sights more accurately will be given presently. The instrument will be very much improved if a small tube, stopped at one end with a piece of tin, having a hole in it, be substituted instead of the strip of metal with a hole in it as above. This tube can be fastened to the top of the level. The size of the tube is immaterial. Blacking the inside of the tube adds to the comfort of observing.

To successfully use the level, some support is necessary. The instrument can be supported by boring a hole in the bottom of the level and placing it on a light rod or stick, after the manner of a Jacob's staff, or it may be used on an ordinary carpenter's trestle, with a wedge or screw under one end, or a regular tripod can easily be made as follows. From a 2-inch board, saw a triangle, 10 or 12 inches on each side. Procure three pieces for legs, an inch thick, two inches wide at one end and tapering nearly to a point at the other, and four and a half or five feet long. Bore holes through the wide ends of the legs, and bolt the corners of the triangular block with half-inch bolts and thumb nuts. In the middle of the top of the triangular block fasten a piece one inch thick, two inches wide, and as long as the level, by a screw through the middle so that it can turn in any direction. On the sides of the last mentioned piece fasten little strips, to keep the level from falling off. A short bolt or long screw through one end of this strip for raising or lowering the level, completes the instrument. The cost in time or money is insignificant, nor do these improvements injure the carpenter's level for its ordinary purposes. A rod can easily be marked off into feet, inches and fractions to measure differences of level with. A piece of white paper, held by hand, will do for the target.

To adjust the sights more accurately than by the method previously described, either of two methods may be used.

First Method.—This method is applicable when a sheet of still water can be obtained. Set the instrument quite close to the edge of the water, level it approximately by moving the legs and then level it accurately by the screw under one end of the level. Near the instrument, drive a stake until the head is even with the surface of the water, drive another further away, say 100 feet. Hold the rod on the first stake, sight and note the reading. Do the same for the other stake. If the readings are the same, the sights are correct. If they are not, move one or the other sight up or down until the two readings are the same.

Second Method.—If a sheet of still water is not at hand drive two stakes in the ground, and place the instrument exactly half way between them. Level the instrument, sight at the rod and note the reading for each stake. The difference of these readings is the true difference in level of the stake, whether the sights are correct or not. Set the instrument over one of the stakes and level it. With the rod measure from the top of the stake to the line of the sights and make note of the distance. Hold the rod upon the other stake, sight with the instrument and note the reading. If the difference of the last two readings is the same as that of the the first two the sights are correct, if it is not move the sight until the last difference is the same as the difference when the instrument set between the stakes. The adjustment cannot be made too carefully as the accuracy of all subsequent work depends upon this.

Cheap leveling instruments can be bought in the cities but it is believed that the farmer can make the one described above with little or no expense, and have an instrument less liable to get out of adjustment and as accurate as the instruments sold as "farm drainage levels." The writer sometimes meets a person who thinks it would be "better to buy a regular engineer's level, and have something that is reliable." To any who are of this opinion I would say that while an engineer's level is undoubtedly capable of greater accuracy, yet, in the hands of any but an expert it is inferior to the instrument just described. To the inexperienced the ordinary engineer's level is very complicated, it certainly has a great number of adjustments and unless each is correctly made will give false results with the greatest facility and without warning. A trial level made five years ago by the writer for a farmer has been in constant use and has proven itself a very valuable instrument. Others, made since, have given entire satisfaction.

In using the instrument, first, see that it is in adjustment, for simple as it is it is liable to get out of adjustment, second, if possible, set it half way between the points whose difference of level is to be determined, third, avoid sights longer than 250 or 300 feet. Careful engineers with their expensive instruments, do not make much longer sights than as above, and fourth, in sighting turn the level so that the rod shall appear exactly in range with the small notch in the forward sight.

FIELD WORK.

Before laying out the drains for a piece of land, the farmer must determine the source of the water. It may be that the water comes from a few springs or flows on from higher ground. As soon as the source is determined the best channel is easily decided upon. The ditch should be as short and direct as possible, for then the water has a less distance to go, the fall is greater, and resistance of curves and friction on the sides are less.

After the location of the ditch has been decided upon, stakes should be set every 4 to 6 rods, and at least, at any considerable change in the ground. These stakes should be numbered for identification. The distance between them should be determined at least approximately. The number of the stakes and the distance between them, of an imaginary survey, are entered in the first two columns of the following table

1	2	3		4	5	6		7
Sta	Dist.	Reading		Fall	Rise	D. D.		Remarks.
	Rods	Ft.	In	In.	In.	Ft.	In.	
1	......	1	10¼	......	......	3	00	Near corner of fence
2	4	2	8	9¾	......	2	6¼	
3	3	3	2	6	......	2	3¼	Turns about 30° to right
4	5	3	10	8	......	2	¼	
5	6	4	00	0	0	2	6	
6	2	2	6	......	18	4	2	On top of ridge
7	2	3	10	16	......	3	00	Edge of corn.
8	2	4	0	4	.	2	11	
8	......	2	4	..	......	...	......	Level changed
9	3	3	1½	9½	....	2	6	
10	5	3	2	½	......	3	1	

The data in the third column is obtained by setting the level on the line, not more than 10 or 12 rods from the end of the proposed ditch, and sighting upon the rod held, as it is held at each stake in succession In doing this, notice that the bubble is in the middle at each sighting. After sighting at stake 8 and obtaining the quantity 4 feet 1 inch, it is supposed that it became necessary to move the instrument, on account of the distance being too great, or of some obstruction to the sighting. Having moved the instrument to some convenient place beyond, begin again, treating the last stake as though it were the first, and proceed the same as before until the instrument is moved again.

Columns 4 and 5 explain themselves. The numbers in these columns are the successive differences of the quantities in the third column. In this connection it is well enough to bear in mind that in reality the instrument is only a very extended horizontal line or surface, and that the quantities read on the rod are the distances from its line or surface down to the ground, consequently the greater the reading of the rod, the lower is the point on the ground Notice that moving the instrument is equivalent to taking a new horizontal line or surface.

The sixth column gives the depth of ditch We will not discuss the question as to the best depth at which to lay tile, if indeed we are supposed to be laying out a tile drain. In the case in hand, we have supposed it necessary to have a ditch 3 feet deep at stake 1, and desirable to have it 3 feet at stake 7 This gives a net fall of 15 inches in 15 rods, or an inch to a rod, which is ample for either a tile or an open ditch A greater fall can do no possible harm In passing it may be worth while to mention that a farmer with exactly the appliances and means here advocated laid about 70 rods of 3 and 4 inch tile, with a fall of ⅜ of an inch to the rod, which works perfectly. The same farmer did the engineering for a neighbor who dug up and re-laid 50 or 60 rods with a fall of about ½ an inch to the rod. The tile was originally laid by running water, and seemed to have never worked. It now acts satisfactorily

The remaining quantities of column 6, *i. e.*, those intermediate between 1 and 7, are found as follows The ditch is 3 feet at stake 1, and fall 1 inch to the rod for four rods, *i. e*, fall 4 inches to 2 If the surface were level, the ditch would be 3 feet 4 inches at 2, but as the ground falls 9¾ inches (see column 4) in the same distance, the ditch will be 9¾ inches less than 3 feet 4 inches or 2 feet 6¼ inches deep By a similar process the other quantities are easily filled in.

The depths at 8, 9 and 10 were determined on the assumption that the grade from 7 on is 1½ inch to the rod There is no objection to increasing the rate of fall, but it should not be decreased without putting in a silt-basin or well to catch the sediment which is liable to be deposited where the velocity of the current is decreased by diminishing the fall

For convenience the quantities of column 6 should be written upon their respective stakes. The stakes should not be disturbed in opening the ditch, the latter may be dug a little to one side of the line of stakes.

GRADE LEVEL.

In digging the ditch it will be found difficult, if not impossible, to keep the bottom at the proper grade between the stakes by the unaided eye. There are many devices for accomplishing this, it is believed that a modification of the ordinary A level is as cheap, convenient and efficient as any. It can be made by even an unskilled workman.

CANADA THISTLES.

An act concerning Canada Thistles, approved and in force March 15, 1872, provides that—

"The commissioners shall, annually, before the first day of November, make a written report to the supervisor of the town, or to the county commissioners, as the case may be, which report shall be filed with the town clerk, or, in counties not under township organization, with the county clerk. The report made to the supervisor shall be publicly read at the annual town meeting. Said report shall state—

"*First*—Whether there are or not any Canada Thistles growing in the town or precinct.

"*Second*—If any are growing, where, and how many, and when and how introduced.

"*Third*—A detailed statement of his treatment of each infected tract, with cost and result.

"*Fourth*—He shall report such other matters as may be required of him by the board of town auditors or by the county commissioners.

"*Fifth*—He shall state his views on their further treatment, and make such suggestions and recommendations as he may deem proper and useful.

"And he shall also forward a copy of said report to the Secretary of the State Board of Agriculture, who shall collate and report the same to the Governor by the first day of December of each year."

The act in relation to Canada Thistles has been observed to a very limited extent.

The following are the only reports made to the Secretary of the State Board of Agriculture for the year 1881:

COOK COUNTY.

Report of Cornelius Hankins, Commissioner Canada Thistles, Lemont Township.

As required by Sec. 6, chapter 18, Revised Statutes of Illinois, I submit herewith my annual report as Commissioner of Canada Thistles, for the year ending Oct. 31st, 1881.

The extent of territory infested with Canada Thistles in this township will be best understood by referring to the places where they are growing, and which are described as follows:

Five patches on the Illinois Stone Company property near Hastings—two of these patches lie north of the railroad and cover three-quarters of an acre—and two patches lying south of the railroad, cover about the same extent of ground.

Two patches on Walker's property on the north ½ of section 21, at Hastings, between the railroad and canal; one patch on Monahan's farm, in section 28; one patch on Peter McGuire's farm, in section 21, and a few scattered plants in D. C. Skelley's garden adjoining.

One patch on McGraw's land, in section 22, 10 feet by 20 feet.

One patch on Widow Reed's farm, in section 22, 30 feet by 60 feet.

One patch on Charles Claffey's farm, in section 24, 10 feet by 15 feet.

Three patches on John Jardine's farm, in section 25, covering nearly an acre.

One patch on land known as Lacy's farm, on the Romeo Road, in section 30, 15 feet by 30 feet.

Three patches on the highway; two between the Sag and Lemont, and one between Lemont and the Will County line

One patch on Singer's property, in section 20, between the canal and river, 15 feet by 60 feet.

As far as can be learned, the present growth of Canada Thistles in this township, was first noticed about five years ago, when they made their appearance simultaneously in various places. Nothing has been ascertained as to the source from which they have been propagated, and the only instance in which their presence is known, prior to that period, was on the farm of Wm. R. Derby, in section 34, about eighteen years ago. Mr. Derby says, that he completely eradicated them in one winter, by keeping a number of sheep in the pasture where they were growing during the whole of that season.

Within the year just past, notices were given in May to owners whose lands were infested, to take action in preventing their growth, and in every instance the notices were complied with, by cutting the weeds down before they reached maturity; twice during the season. In some cases salt was applied in June while the sap was in the plant, but without any appreciable effect. The treatment adopted—the cutting down before the seeds are ripe—has been effectual in preventing the weeds from spreading, but not in preventing their reappearance each successive season, and from the experience of this and past years, the only effectual remedy that presents itself lies in the careful grubbing out of every portion of the weed, care being taken to include every vestige of the root, and its complete destruction by fire. I am fully convinced that in this method lies the only remedy for their complete eradication, and that, although objection may be urged against its expense, it will prove, in the end, the most satisfactory and economical.

DE WITT COUNTY.

Report of P. B. HERRINGTON, Commissioner Canada Thistles, Wapella Township.

We have Canada thistles in six or seven different places that I know of in the above named townships, and all excepting one of those parties are making an effort to subdue them. I have been cutting in June and August, but there is no way better than to repeatedly plow them under when they make their appearance above the surface, or, when they are in small spots, salt cattle on them. A law firm in Decatur has 80 acres with more thistles on it than any one tract. They were introduced by shipping seed wheat and apple trees, wrapped in straw, several years ago.

LEE COUNTY.

Report of GEORGE EATON, Commissioner Canada Thistles, Paw-Paw Township.

I, the Commissioner of Canada Thistles of Paw-Paw, do hereby report that there are six patches growing in this town.

One on S. Butterfield's land, nearly one acre; was plowed, planted to corn and afterwards cultivated; neither killed nor spread much.

One on Mr. Paine's land, 30 or 40 feet square; were kept mowed down; he thinks this the best way to destroy them.

One on Widow Foust's land; small quantity; kept them pulled; nearly killed.

One on O. D. Edwards' land, nearly 2 acres; in hay land; were mowed, then burned over and afterwards plowed; intend to keep plowed until killed.

One on A. Bartlett's land, ¼ of an acre; in pasture land among stones; could not plow, but were kept cut down; intend to keep them cut till killed.

One on W. Harper's land, ½ acre; were plowed, then corn was drawn onto them and fed to steers and hogs; intend to keep plowed till killed.

Another year I intend to plow all that can be plowed; think it the best way to kill them. Have spent four half days looking after thistles. This is the only cost to the town.

M'HENRY COUNTY.

Report of AHIRA THOMPSON, Commissioner Canada Thistles, Coral Township.

This is to certify that I have canvassed the township of Coral during the past summer for the purpose of ascertaining the extent of Canada thistles in said town, and find them on the farms of the following: H. Lockwood, Newton, Pearson (seven acres in one plat), Weaver, Rhew, J. Marsh, J. Williams, C. Wesche, who have kept them cut, and partly killed; Keeler, Frank Sheldon, H. B. Simpkins, S. Loomis, Wm. Boise, E. H. Seward, O. S. Farmer, A. Dunham, Wm. Ross, J. M. Frink, Hammars, John Hatch, who use salt, and in some cases with success; C. L. Ross, Geo. Banner, A. Brown, Sam Grimes, E. R. Morris, A. Thompson, who dig and salt, with good results; Clark Rogers, Nickol, T. Williams, kill by plowing. The following report patches entirely killed: H. B. Simpkins, S. Loomis, J. M. Frink, S. Nickerson, Geo. Ross, Geo. Jackson, Curtis, Geo. Banner, McFall, David Davis, Wm. Ocock, R. C. Palmer, John Eddy, John Hatch, Douglass, Adams, E. R. Morris, A. Thompson, A. Peak, F. Stephens, C. Harris, C. Hastings, G. Metcalf, Wilson Osborn, Wilcox, Bradford, Darling, Toxin, Caton, John Peters. The thistles on the seven acres were first discovered 28 years since, after seeding with barley; the barley was bought in Chicago.

The thistles on the Boise farm had been occupied or pastured by sheep brought from Vermont; supposed to come in their wool.

Our law is not what it should be. It says the town board *may* appoint. Some do appoint and some do not. Cannot this be amended by putting the word *shall* in place of *may*?

When all work together we can destroy the Canada thistle. Plenty of salt will do it.

One hundred and seven plats of ground with Canada thistles; thirty-six killed by applying salt.

MC LEAN COUNTY.

Report of JOHN T. JOHNSON, Commissioner Canada Thistles, Lawndale Township.

Canada Thistles are growing in said town; No. 1, on John Hawthorn's land, section 23, south ½ southwest ¼, June 11, No. of thistles 73; August 15, none to be seen; treatment, plowing; township expense, nothing; discovered 13 years ago; how they came there, not known.

No. 2, on John Hamilton's land, E ½ of south ½ southwest ¼, section 15; discovered about 5 years ago; treatment, plowing and pulling; 23 in number in June; no township expense.

No. 3, on John Burdett's land; a few to be seen in June, none in September; discovered 2 years ago; treatment, plowing; no township expense.

No. 4, on John Cassaday's land; lying southwest of his house in pasture August 23; discovered 1880; length of patch 31 steps, width 22; township expense, nothing; how they came there, not known.

No. 5, on P. B. Williams' place; not entirely killed; treatment, plowing and pulling; discovered 8 years ago; no expense to township.

No. 6, on John White's land, N. W. ¼ section 11, on pasture; treatment, salting cattle on the patch; about killed; discovered 2 years ago; how brought there not known; no township expense.

No. 7, between farms of Mary Walker and Mr. Leaf, Sr.; discovered about 5 years ago; treatment, plowing and pulling; no claims presented for this year; how brought there, not known.

No. 8, on the S. ½ S. W. ¼ of sec. 23, owned by Jesse Chisholm; number thistles 1; how came there, not known; treatment, salting stock on the ground.

No. 9, on the S. E. ¼ of sec. 26, owned by T. B. Killgore; treatment, salting cattle where the thistles grow, and cutting them under ground; time spent by me, 3 days; the number of thistles is diminishing; some plow, others salt; the best way to destroy is to plow them every 10 days or 2 weeks. They have caused no township expense this year.

WILL COUNTY.

Report of JOHN DEIST, Commissioner Canada Thistles, Green Garden Township.

The Commissioner of Canada Thistles for the town of Green Garden, County of Will, would report that said thistles are now growing in said town on the farm of Henry Sippel, section 29, about 1 acre; on the farm of Christian Bettenhausen on section 20, about 5 yards square; on the farm of John Bettenhausen on section 29, about 10 yards square; on the farm of Peter Stauffenburg on section 7, more than 1 acre; on the farm of Henry Raham on section 16, about ½ acre; on the farm of Christian Kepley on section 10, about ¾ acre; on the farm of Jacob Ross on section 5, about ½ acre.

The treatment of each infected tract of land this year was only cutting off by the owners before they seeded. I believe said thistles should be treated further till they are all gone.

SECOND ANNUAL REPORT.

By H. A. WEBER, Chemist State Board of Agriculture.

THE SORGHUM-SUGAR INDUSTRY.

Since my last year's report the Sorghum-sugar industry has made rapid strides in advance. The results of the experiments, both scientific and practical, made in the season of 1880, by my colleague, Prof. M. A. Scovell, and myself, and reported last year, have been verified, not only by our own investigation, conducted the following season, but also by those of other experimenters in various parts of the country. An unusual interest has been awakened in the subject of producing Sorghum-sugar, all over the country, and the writer has received letters of inquiry in regard to this matter from nearly every State in the Union. The innovation of manufacturing glucose from the seed of sorghum, which we have shown to be practicable, has given especial impetus to the enterprise. This process clears away one of the great objections that business men have made against the manufacture of sugar, namely: the shortness of the working season. The seed is practically ripe when the cane is in its best condition. It can be cured like other grain, stacked, threshed and kept for an indefinite length of time. The manufacture of the seed into glucose can be accomplished with the same, or almost the same machinery used in making sugar and syrup from the cane. This gives employment to the works for nearly or quite the whole year, saves the interest on the investment, prevents the deterioration of the machinery which would result from the works lying idle for nine or ten months each year, and furnishes, besides, a lucrative business. Taking all things into consideration, we are justified in looking upon the sorghum industry as an established enterprise. There is, as a matter of course, still room for improvement, both in the cultivation of sorghum and in the methods of manufacturing, and a great field for original research is as yet left open. But with the knowledge and means now at our command, the production of sugar in our own State is no longer a matter of experiment, but an assured success.

The first systematic effort for the manufacture of sorghum sugar, as the result of the experiments made in the last two years by Prof. Scovell and myself, was the establishment of the

CHAMPAIGN SUGAR AND GLUCOSE COMPANY

By a number of enterprising citizens of Champaign. Being satisfied that the results obtained by us were reliable, that the manufacture of glucose from the seed would be of great value in making the enterprise successful, and being especially impressed with the simple and practical improvement in the manufacture of sugar and syrup incidentally discovered by us while pursuing our investigations, by which the acrid and objectionable sorghum taste is removed from both sugar and molasses, the company was organized with a capital stock of $25,000. A farm of about 200 acres was leased for the purpose of growing sorghum. Two varieties, the Early Amber and the Orange, were planted. Notwithstanding the late and unfavorable season for planting, the cane is at present in an excellent condition, and bids fair to yield a heavy crop. Besides, the company supplied neighboring farmers with seed, and have contracted for the raising of 100 acres more, making in all 300 acres. As the season is fully a month late, operations at the factory cannot begin before the first of September. The cultivation of the cane, the planning of the building, and the procuring and arrangement of the necessary machinery and apparatus were left in charge of my colleague and myself.

A strong frame building, 40x60 feet, with a "lean to" 36x45 feet, covering the crushers and engine, has been erected. The motive and evaporating power is furnished by a ninety horse-power engine, and two ninety horse-power boilers, the latter being situated in a brick boiler house, a short distance from the main building.

For the sake of simplicity, I will combine the description of the remainder of the machinery with that of the process of manufacture to be employed, as soon as operations begin. The cane will be cut as it grows in the field, and hauled to the factory. Here it will be placed upon an apron, which conveys it to the *stripping* and *topping* machine. (The inventors of this machine, two of our students, claim that it will strip and top ten or more tons of cane per hour). After being stripped and topped the cane is conveyed by means of another apron to the first crusher, a mill of 20 tons weight. The bagasse after leaving the first mill is moistened by a spray of hot water, and carried on an apron to the second crusher, a mill of 30 tons weight. After leaving the second mill the bagasse is carried on an apron to the front of the boiler house, where it will be used for fuel.

The juice from the two mills runs into a common cast-iron tank, from which it is continually pumped to the juice tanks, placed in the top of the building. These juice tanks are made of wood, so that they may be used as converters in the process of making glucose.

From the juice tanks the juice is drawn into the defecators, five or more in number. Here it is treated with slaked lime, either in the form of milk or dry powder, or with calcium carbonate. This part of the process must be done with great care, as the subsequent defecation depends upon it. Sorghum juice, in its natural state, is always more or less acid. The reason that in the ordinary process of making syrup from sorghum, even when the cane is cut and worked up in the proper time, crystalized sugar can not be produced with any degree of certainty, depends upon the fact that during the process of defecation and evaporation in presence of the natural acids of the juice, the same sugar is converted into inverted or uncrystallizable sugar. From this it is apparent that for the production of sugar the acids must be neutralized. On the other hand, a marked excess of lime has a deleterious effect upon the defecation of the juice. There are always present in sorghum juice, certain salts of the metals of the alkalies, potassium and sodium. When these come in contact with an excess of lime a chemical change takes place, by which caustic potash and soda are liberated. These substances possess the property of redissolving the coagulated albuminoids, which form the greater part of the scum, and thus prevent the purification of the juice. After exact neutralization the juice is heated to the boiling point and thoroughly skimmed. The defecators are made of wood lined with galvanized iron, and the heat is applied by means of a copper steam coil at the bottom of each.

From the defecators the juice is allowed to run into the evaporators. There are two of these three feet deep and eight feet in diameter, made of copper and supplied with a double copper coil for the purpose of rapid evaporation by steam. After being evaporated to density of 25 degrees Beaume, the liquor is drawn off into setting tanks. If the liquor contains a precipitate in suspension, this is allowed to subside as far as possible, after which the liquor is run through bag-filters or other suitable filters, in order to free it from any solid matter which it may still contain.

The clear liquor is next run through bone-black filters. These filters are four in number, two feet in diameter and twelve feet high, made of strong boiler iron, and filled with coarse animal charcoal.

The filtered liquor is next drawn into the vacuum pan, where it is concentrated to the consistency of forming melada, or mush sugar. The vacuum pan is seven feet in diameter, made of cast-iron, and contains three separate copper coils. It has a capacity of making about 10,000 pounds of sugar at a strike When the strike is completed the contents of the vacuum pan are discharged into crystallizing wagons or tanks, and if necessary, allowed to stand several days.

The melada next goes into the mixer, and from there into the centrifugal machine, where the sugar is separted from the molasses. The foregoing is a description in brief outline of our works, and of the process of manufacturing sugar and syrup. The minor details are omitted.

Up to the present time sorghum seed has never found a proper utilization. Although in its general composition it resembles other grain, as corn, the amount of tannin contained in it, as our analysis given in last year's report shows, will no doubt prevent its liberal use as food for man or animals. Knowing that immense quantities of seed will necessarily be produced as soon as the sorghum industry is established, we have given the subject careful study, and have found that the seed is eminently adapted to the production of glucose. We have prepared glucose directly from the seed without the tedious and expensive process of first preparing the starch. The amount of glucose obtained is three-fourths or more of the weight of the seed employed. The tannin does not interfere as it is converted into glucose by the same means which are employed to convert the starch, namely, boiling with diluted acids.

EXPERIMENTS IN 1881.

As last year, our work again occupied two distinct fields of experiments: First, scientific investigations, in which the nature of sorghum cane was further studied; second, practical experiments in making sugar. Besides the objects of our analytical work, as enumerated in our last report, our attention was directed to the following additional and important points:

1. To study the effect of different varieties of soil on the development of sugar in the cane.
2. To determine the effect of fresh barn-yard manure upon the development of sugar in sorghum, as well as upon the quality of the cane for production of sugar and molasses.
3. To compare the different varieties of sorghum as sugar producing plants.

For the sake of convenience of reference, the results of the two seasons are given in a table below.

These examinations were conducted in the following manner:

On the dates specified, ten average stalks were selected from the given field, stripped, topped just below the uppermost leaf, and cut off one joint above ground. The stripped and topped cane was crushed in a thoroughly cleansed Victor mill. The juice was collected in a bottle, and after being cooled down to 20° c., the sp. gr. was noted, then 10 c. c. were put into a graduated cylinder for the estimation of grape sugar, and 10 c. c. were put in a beaker for determining the amount of cane sugar.

For the estimation of grape sugar, the 10 c. c. measured off for this purpose were diluted so as to measure exactly 100 c. c., and the grape sugar then determined by Fehling's solution.

The portion reserved for cane sugar was diluted, 12 drops of dilute sulphuric acid added, and the whole heated over a water bath for one hour. The mixture was then allowed to cool, sodium hydroxide added to alkaline reaction, dilutek to 500 c. c., and the total amount of sugar determined with Fehling's solution. The difference between the grape and total sugar was estimated as cane sugar by multiplying by 0.95.

The results of the analyses are given in the tables which follow:

TABLE SHOWING THE DEVELOPMENT AND CHANGE OF SUGARS IN SORGHUM.

Stage of Development.	No.	Date.	Variety.	Sp. gr. of juice.	Grape sugar.	Cane sugar.	Av. of cane sugar.
Beginning to head	1	Aug. 14, '80	Orange..	1.055	5.70	4 90	4.1
" "	2	Aug. 10, '81	Amber.	1.058	8.39	3.38	
In blossom	3	Aug. 25, '80	Orange..	1.062	6.10	7.12	7.77
" "	4	Aug. 10, '81	Amber..	1.066	5.43	8.42	

Stage of development.	No.	Date.	Variety.	Sp. gr. of juice.	Grape sugar.	Cane sugar.	Av. of cane sugar.
Seed soft and milky...	5	Aug. 14, '80	Amber	1 065	3 34	10 75	8 56
" " " "	6	Sept 6, '80	Orange..	1 068	5 00	9 13	
" " " "	7	Aug. 10, '81	Amber	1 068	4 25	9 84	
" " " "	8	Aug 12, '81	Amber	1 070	3 75	12 75	
" " " "	9	Sept. 1, '81	Orange..	1 048	6 11	71	
" " " "	10	Sept. 2, '81	Orange..	1 048	6 58	5 19	
Seed in hardening dough............	11	Aug. 25, '80	Amber	1 068	2 47	12 48	11 95
" " "	12	Sept 16, '80	Orange..	1.065	4 11	9 76	
" " "	13	Aug. 10, '81	Amber	1 074	3 65	10 10	
" " "	14	Aug. 12, '81	Amber	1 074	2 65	13 37	
" " "	15	Aug. 16, '81	Amber	1 070	3 92	11 89	
" " "	16	Aug. 16, '81	Amber .	1 072	3 00	13 66	
" " "	17	Aug. 19, '81	Amber .	1 067	3 46	12 49	
" " "	18	Aug. 19, '81	Amber	1 074	3 10	13 18	
" " "	19	Aug. 19, '81	Amber	1 076	2 97	13 64	
" " "	20	Aug. 19, '81	Amber	1 070	2 98	12 80	
" " "	21	Aug. 19, '81	Amber	1 070	3 26	12 52	
" " "	22	Sept. 1, '81	Liberian	1 060	3 67	10 24	
" " "	23	Sept. 1, '81	Amber	1 063	2.61	13 47	
" " "	24	Sept. 1, '81	Amber .	1 056	2.18	11 14	
" " "	25	Sept. 1, '81	Chinese.	1 052	4 13	8 60	
Seed ripe............................	26	Sept. 6, '80	Amber.	1 064	2 13	11 42	11.18
" "	27	Sept. 16, '80	Amber	1 065	2 79	11.02	
" "	28	Oct. 2, '80	Amber	1.069	2.47	10 06	
" "	29	Oct. 6, '80	Orange	1.078	4 02	11.41	
" "	30	Sept. 9, '81	I. I. U.	1 070	2 93	12 48	
" "	31	Sept. 1, '81	Amber..	1.070	2 71	10 77	
" "	32	Sept. 2, '81	Amber	1 070	2 61	10 57	
" "	33	Sept. 5, '81	Amber	1.067	3 16	11 76	

The analyses made in 1880, numbers 1, 3, 5, 6, 11, 12, 26, 27, 28 and 29, were from cane grown on the University farm.

An analysis was made of the soil on which these two varieties of cane grew, and also of its subsoil and of a virgin prairie soil adjoining. The following table gives the result of these analyses. No. 1 was prairie soil, No. 2 the soil on which the cane grew, No. 3 its subsoil:

Soil.	No. 1.		No. 2.		No. 3.	
Organic matter...	1 9414	....	2 4880	....	3 7551	....
Silicic acid....	0.0798	....	0.0617	....	0 0975	....
Sesquioxide of iron............	1.8367	... .	1.4517	....	1 2650	....
Alumina	1 4775	....	0 5700	....	1 7150	....
Manganese........	0.1798	....	0 2200	....	....	....
Phosphate of lime	0 1683	....	0 2103	....	0.1152	....
Carbonate of lime	0 3835	.. ..	0 5845	....	1 2515	....
Carbonate of magnesia.............	0 5244	....	0 6757	... .	0 7140	....
Potash.........	0 0733	....	0 0785	....	0 0505	... .
Soda	0 0177	....	0 0211	... .	0 0970	....
Sulphuric acid........................	0 1403	....	0 1519	....	0 2137	....
Soluble matter found............	....	6 8327	....	7 5134	....	9 2745
Organic matter......................	4.1150	....	6 0700	....	8 9549	....
Silicic acid	72 1765	....	68 7127	....	68 0224	....
Alumina with trace of iron.	12.7143	....	12.0520	....	9 3156	....
Lime	0 5729	....	0 7721	....	0 6444	....
Magnesia	0 4893	....	0 4831	....	0 4836	....
Potash	3.0041	....	3 0331	....	2 4561	....
Soda	0 5120	....	0 6344	....	0 5664	....
Manganese	0 0093	... .	0 0847	....	....	....
Phosporic acid	0.1933	... .	0 1553	.. ..	0 2628	... .
Insoluble matter found....... ...	....	92 7867	....	91 9974	.. ..	90 7062
	99 6194	99 6194	99.5108	99 5108	99 9807	99.9807

Analyses Nos 2, 4, 7 and 13, were made from cane grown upon the farm of Mr. J. W. Cushman, two miles south of Urbana. The field on which this cane was planted had grown seven consecutive crops of sorghum, without manure. It was high prairie land sloping toward the south. Seed planted April 25.

The cane of Nos. 8 and 14 was grown about one and one-half miles N. E. of Urbana, on timber land. The field had been used as a barn yard previous to its being planted with cane and was therefore richly manured. The seed came from Minnesota through Mr. Le Duc, ex-Commissioner of Agriculture. The seed was planted the first week in May. Cultivated as usual for corn.

Results Nos. 15 and 16 were obtained from cane grown three miles south of Champaign, on virgin prairie. Eight rows were planted along the roadside, bounded on the outer side by the road itself and the inner by a tall, dense hedge-fence. Mr. Holmes, the owner of the cane, said the seed came from Mississippi and was planted the last week in April. Land gradually rising from a slough near by. Two varieties of heads were present in this cane; the panicles of one (analysis No. 15) were clustered and erect; those of the other (No. 16) were spreading with pedicels drooping.

No. 21, University farm. Volunteer cane, from cane grown on the field last year.

The cane from which analyses Nos. 17, 18, 19 and 20 were made, was grown upon timber land about three miles N. E. of Urbana. The seed probably came from Minnesota.

No. 17. Cane grown by Mr. E. Bishop. Field ten years in cultivation, manured three or four years ago. Seed planted about the middle of May. Rows 3½ feet apart in hills 3 feet apart. An average of eight stalks in a hill. Cane small. Nos. 18 and 19, cane grown by Christ. Shuman. No. 18 was on high land, twelve years in cultivation and had never been manured. An average of five stalks in a hill. Growth of cane medium. No. 19 was on low land, four years in cultivation. Average of eight stalks in a hill. Cane large and thrifty.

No. 20. Cane grown by Samuel Wilson, on land four years in cultivation. Hills 3x3½ feet apart. An average of eight stalks in a hill. Field on the top of a small hill.

Analyses Nos. 9, 10, 22, 31 and 32, were made in Macoupin county, Ill., Nos. 9, 22 and 31 from cane raised about two miles north of Virden, by Mr. Chas. Rauch, and Nos. 10 and 32 one mile west of Girard. by Mr. D. C. Ashbaugh. The prairie soil in this county is very black, deep and "mucky." No. 9. Cane grown on timber land. Seed planted May 12, 1881. Hills 3x3, an average of five stalks in a hill. No. 22. Volunteer cane. Prairie land. No. 31. Prairie land. Seed planted first part of May. No. 32. Prairie land. Seed planted latter part of May.

The results of experiment No. 53 were obtained from cane grown by Christ. Lust, about a mile west of Monticello, Piatt county. The field was timber land—a poor, clayey soil. Seed planted first week in May.

Analyses Nos. 23, 24 and 25 were made of the juice of sorghum grown upon the so-called Mississippi sand-lands near Oquawka, Ill.

No. 23 was from cane grown by Dr. Park, one mile east of Oquawka. Nos. 24 and 25 were made from cane grown by Tom Ricketts, two miles N. E. of same place.

DEVELOPMENT OF SUGAR.

Analyses Nos. 5, 11, 26, 27 and 28 were made from the same field on the dates specified, and show conclusively that the cane sugar reached its maximum quantity when the seed was in the "hardening dough," and that it afterwards gradually diminished. The same fact appears on comparing the average under each division in the table.

EFFECTS OF SOILS.

The following analyses were made to study the effect of different varieties of soil upon the production of sugar in sorghum. But as other circumstances, as locality from which seed was obtained, time of planting and manner of cultivation, may affect the amount of sugar, many more investigations would have to be made before definite conclusions could be reached. The table, however, shows that sorghum can be grown successfully on all varieties of soil specified.

Table showing the effects of different soils on the development of sugar in sorghum:

Variety of soil.	No	Years in Cultivation.	Fertilization.	Variety of Cane.	Sp. gr. of Juice.	Grape Sugar.	Cane Sugar.	Av'ge
Prairie.	1	27	Manured 3 yrs. ago.	Amber	1 068	2 47	12 48	Grape. 2 94 Cane 11 28
"	2	7	No manure	Amber	1 074	3 65	10 10	
"	3	27	Manured 4 yrs. ago.	Amber	1 070	3 26	12 52	
"	4	Unknown.	No manure...	Amber	1 07	2 71	10 77	
"	5	Very old...	No manure	Amber	1 07	2 61	10 51	
Virgin Prairie	6		No manure...........	Amber	1 07	3 92	11 89	Grape. 46 Cane. 12 77
" "	7		No manure...........	Amber	1 072	3 00	13 65	
Timber Land	8	Unknown.	Barn-yard manure	Amber	1 074	2 65	13 37	Grape. 3 07 Cane. 12 87
" "	9	10	Manured 4 yrs. ago.	Amber	1 067	3 46	12 49	
" "	10	12	No manure	Amber	1 074	3 10	13 18	
" "	11	4	No manure	Amber	1 076	2 97	13 64	
" "	12	4	No manure	Amber	1 07	2 98	12 80	
" "	13	Many........	No manure	Amber	1 066	3 16	11 76	
Miss s'nd l'nd	14			Amber	1 063	2 61	13 47	Grape. 2 39 Cane.. 12 3
" "	15			Amber	1 056	2 18	11 14	

EFFECTS OF MANURE.

To ascertain the effect of manure, a field was selected which had been used as a barn-yard for several years. A part of the cane was planted directly on the rotton manure pile. An analysis was made of a sample taken from this part of the field, as well as of a part away from the manure pile. The seed in each case was in the "hardening dough." The following is the result of the analysis:

Manured—Sp. gr., 1.063. Grape Sugar, 2.65. Cane Sugar, 10.89.
Unmanured " 1.074. " " 2.65. " " 13.37.

VARIETY OF CANE.

From the table it appears that the Amber is best adapted for the production of cane sugar. The Orange and Liberian can also be employed advantageously in the latter part of the season, as they mature later. Their yield is greater per acre, and this fact no doubt would compensate for the less proportion of cane sugar to grape sugar contained in them. Analysis No. 25 of the Chinese cane seems to indicate that it would be unfit for the production of crystallizable sugar.

EXPERIMENTS IN SUGAR MAKING IN 1881.

Last year a large number of experiments were made in order to determine the means by which the cane sugar could be made to crystallize. This object was much more readily attained than we at first expected, and consequently we selected from those experiments the one which was most simple and most likely to be practicable when operating on a large scale. In perfecting this, our attention was given to the production of sugar and syrup which should be free from the objectionable sorghum taste and odor. In this we succeeded perfectly. Sorghum juice, in its normal condition, is acid. The conversion of cane sugar into grape sugar by boiling a solution of the same with a strong acid, as sulphuric or hydrochloric, has long been known to chemists. All other acids—even the weak organic acids contained in sorghum juice,—act in a similar manner. Hence it will readily appear why in the ordinary manner of making sorghum syrup so little of the cane sugar originally contained in the juice can be made to crystallize. A great deal of the cane sugar is converted into grape sugar during the processes of defecation and evaporation, and what remains unchanged is prevented from granulating by the undue proportion of grape sugar produced. To avoid this loss of cane sugar, we neutralize the juice when cold with calcium carbonate or milk of lime, or both. This part of the process requires skill and care, as the subsequent defecation of the juice depends upon it. After thus neutralizing the juice, it is heated to boiling and thoroughly defecated. It is then passed through bone-black filters, and finally evaporated to crystallization. The sugar and molasses obtained by this process are unobjectionable in regard to color and taste.

Experiment No. 1.—August 22, 1881. The cane selected for this experiment was grown on land which had previously been used as a barn yard, the same as in analyses Nos. 8 and 14. The seed was nearly ripe, and the cane very thrifty.

Weight of cane crushed	1,560 00 lbs.
Weight of juice obtained	687.50 lbs.
Per cent. of juice	43.40

The juice was carefully neutralized with milk of lime, and brought to the boiling point in the defecating pan. A very heavy green scum rose, and this being removed, the juice was seen to be full of a green, light flocculent precipitate, which did not subsequently rise to the top in any considerable quantity. The juice was now drawn off into tubs, where it was allowed to repose twelve hours. At the end of this time only about one-half of the juice could be drawn off clear, the precipitate being still suspended in the remainder. It was found impossible to filter this portion, and it was therefore thrown away. The clear juice, after being passed through bone-black, was evaporated in a copper finishing pan to the crystallizing point. The melada had a very unpleasant, saltish taste, owing to the presence of salts of ammonia. The sugar crystallized very readily, and although it looked well, it still retained somewhat of this saltish taste after being separated from the molasses. Unquestionably this excessive amount of albuminoids—the green scum and suspended precipitate—was taken up by the plant from the nitrogenous elements of the manure, and the saltish taste was due to ammonium salts which came from the same source.

Manure, therefore, not only has a deleterious effect upon the development of sugar in cane, but it also prevents the thorough defecation of the juice which is necessary to the manufacture of sugar.

Experiment No. 2.—August 25. Cane same as that of which analyses Nos. 15 and 16 were made. Size of field, 3-16 of an acre.

CALCULATIONS FOR ONE ACRE.

	Pounds.
Stripped cane with tops	18,535.3
Stripped cane without tops	15,765.9
Weight of juice obtained	6,545.6
Per cent. of juice of stripped and topped cane	41 52
Weight of melada from juice	1,298.7
" " " bagasse	253 9
Total weight of melada	1,552.6
Weight of sugar from juice	504 00
" " " bagasse	104.7
Total weight of sugar	608.7
Weight of molasses from juice	794.7
" " " bagasse	149.2
Total weight of molasses	943.9

CALCULATIONS FOR ONE TON OF TOPPED AND STRIPPED CANE.

	Pounds.
Weight of juice	830.4
" sugar	77.2
" molasses	119.7

To obtain the sugar from the bagasse, it was packed in large barrels as it left the mill, and was exhausted with water. The percolate thus obtained was treated like juice.

Experiment No. 3.—September 17. Early amber. Obtained from University farm. Volunteer growth among the corn. Seed ripe. Cane mostly blown down:

	Pounds.
Weight of stripped and topped cane	1,440
Weight of juice	637
Per cent. of juice	44 2
Weight of melada obtained	145.8

Experiment No. 4.—Early amber, grown upon University farm:

	Pounds.
Weight of stripped and topped cane	1,161.0
" juice obtained	603.5
Per cent. of juice	36 33
Weight of melada from juice	95.5
" " " bagasse	13.5

	Pounds
Sugar from juice	41.5
" " bagasse	6.0
Molasses from juice	54.0
" " bagasse	7.5

In the last two experiments the cane was poorly developed and full of suckers, and consequently poorly adapted for the production of sugar.

RECEIPTS AND EXPENSES OF ONE ACRE OF SORGHUM.

On the basis of the results actually obtained as described in the foregoing pages, we have calculated the receipts, and from the best data at hand the expenses, for one acre of sorghum:

BALANCE SHEET.

Receipts from Sugar and Molasses.			
600 lbs sugar @ 7 cts	$42 00		
85 gallons molasses	34 00		
		$76 00	
Expenses.			
Cultivating one acre	$10 00		
Stripping and cutting	2 50		
Hauling	6 00		
Four days labor	6 00		
Fuel	1 00		
Barrels	4 00		
Freight and drayage	8 00		
		37 50	
Net profit on sugar and molasses		$38 50	$38 50
Receipts from Glucose			
1250 lbs. glucose @ 2 cts		$25 00	
Expenses.			
Gathering seed	$2 00		
Fuel	1 50		
Labor	1 00		
Barrels	4 00		
		9 50	
Net profit on glucose		$15 50	15 50
Total net profit on one acre of sorghum			$54 00

GENERAL CONCLUSIONS.

1. Seed should be planted as early as possible.
2. The proper time to begin cutting the cane for making sugar is when the seed is in the hardening dough.
3. The cane should be worked up as soon as possible after cutting. Cane which is cut in the afternoon or evening may safely be worked up the following morning.
4. The manufacture of sugar can be conducted properly only with improved apparatus and on a scale which would justify the erection of steam sugar works, with vacuum pans, steam defecators and evaporators, and the employment of a competent chemist to superintend the business. The same is true for the manufacture of glucose from the seed. Our experiments were made with the ordinary apparatus used in manufacturing sorghum syrup, and any person, who desired to work on a small scale, could use the methods with good results, provided he had acquired the necessary skill in

neutralizing and defecating the juice and in the treatment of bone-black filters.

The manufacture of glucose on a small scale is entirely out of the question. Five hundred to a thousand acres of sorghum would be sufficient to justify the erection of steam sugar works, and this amount could easily be raised in almost any community within a radius of one or two miles from the works.

RELATION OF THE SORGHUM INDUSTRY TO AGRICULTURE.

"A visible, gradual deterioration of the arable soils of most civilized countries cannot but command the serious attention of all men who take an interest in the public welfare. It is of the utmost importance that we do not deceive ourselves respecting the danger indicated by these signs, as threatening the future of populations. An impending evil is not evaded by denying its existence, or shutting our eyes to the signs of its approach. It is our duty to examine and appreciate the signs."—*Justus von Liebig.*

These prophetic words of my honored teacher are of peculiar significance to us as a nation, at the present time. We are following the example set us by the nations of the Old World, in our system of agriculture, and are exhausting our soil regardless of the lessons which the history of bygone peoples teaches us, and with no thought of the perils which the present system of robbing the soil will inflict upon future generations, when barren fields shall fail to yield the necessary food for the teeming population which our vast resources of fertile land is so rapidly calling into existence. The exhaustion of soil in our own land is being accomplished much more rapidly than was the case with older nations. We are living in a time when the means of transportation are so much superior to those of former times, as not to admit of comparison. The markets of the whole world are open to the products of our fields, and we are taxing our soil to its utmost capacity in order to meet the demand, without making judicious use of the means at hand to replace what this continual drain is taking from our land. The inexhaustible fertility of our soil, especially of our own State, which has been spoken of so much and praised so highly, is already being shown to be an idle boast. Our prairie looks a great deal richer than it really is. The most of our cultivated fields at the present time would respond gratefully to a liberal application of manure.

Every agricultural industry which tends to counteract the present system of exhausting the soil, should receive the hearty support of all persons interested in the public welfare. The Southern States have a staple, cotton, which furnishes them this desired effect. The products of this crop, fiber aud oil, are composed of elements which are taken from the air. The refuse, which contains the valuable mineral constituents necessary for the growth of the plant, should be returned to the fields. The exportation of oil-cake is as pernicious to southern agriculture as the exportation of corn and wheat is to the North, and is much less pardonable, as each cotton crop furnishes two remunerative products, fiber and oil.

What cotton is for the South, I think I am justified in saying, sorghum will be for the North.

Sugar, like cotton fiber, is composed of elements taken from the air. A part of the mineral constituents of the soil will of course remain in the molasses; but by saving the refuse matter, scum, ashes from burning bagasse, discarded bone-black, etc., a fertilizer could easily be prepared at the works, which would repay two-fold the expense of putting it on the fields, and in the course of a few years would bring the fields to a better condition for raising other crops, as wheat or corn, than they were in at the time the cultivation of sorghum was commenced.

THIRD ANNUAL REPORT

UPON

USEFUL AND NOXIOUS PLANTS.

THE BACTERIA,

THE SMALLEST AND SIMPLEST PLANTS. AN ACCOUNT OF THEIR NATURE AND EFFECTS.

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INTRODUCTION.

Biology—the science of life—has no more interesting and important problems than those concerning the smallest and simplest animate objects, the *Bacteria*. These exceedingly common living things, visible to us only by the aid of powerful magnifiers, have latterly received much attention on account of the endeavor to find out, by scientific research, the origin of life on our globe; but more than this, for the undreamed of power and influence which they have been found to possess and exercise in the operations of the organic world. Since the discovery of their existence and modes of action, many questions previously unanswerable have become easy, and the knowledge obtained has passed into science to serve not only as an intellectual stimulus to man, but sure standing-ground from which he may reach other heights and gain at last his rightful dominion over the forces and objects of earth.

It is not too much to say that mankind could not continue to exist, could never have existed, on the earth as at present constituted, but for these microscopic though effective agents; neither does the truth of this depend on any mere figure of speech, but on the actual and essential work accomplished. Without them, and with other things as they are, there could have been no fertile soil, no luxuriant pastures, no bountiful harvests, no possibility for man. On the other hand, we would not suffer many of the ills that flesh is heir to if we could escape their restless activities in certain forms and ways.

It is the object of this paper to present, in language freed as far as possible from technical words, the principal and most interesting facts now known about these silent working denizens of the earth, the air and the water. Should any one wish to inquire further, he may soon find an abundant literature on the subject: but the whole matter is still so new that a great proportion of this is in the scientific periodicals of the last two decades, and unfortunately for many very much of it is in foreign tongues. The best general work of American publication is The Bacteria, a translation from the French of Dr. Magnin, by Dr. G. M. Sternberg: Little, Brown & Co., Boston, Mass. There are several excellent general articles in numbers of the *Popular Science Monthly*, and reports by Drs. Detmers, Law and Salmon, on infectious diseases of animals, in the Annual Reports of the United States Commissioner of Agriculture for 1878-79-80. For "blight" in pear trees, etc., see report for 1880, of the Illinois Industrial University.

For the practical study of these minute organisms a good compound microscope is required, and ability to use it; but any one possessing fair ability, with plenty of patience, may gain a large amount of information by the aid of an instrument costing from $50.00 to $100.00.

PART I—NATURE AND ORGANIZATION.

EXISTENCE AND HABITAT.

The minute organisms, to which the term *Bacteria* is now commonly applied, cannot be individually recognized without a magnifying glass of high power; so, to those not accustomed to work with the compound microscope, the existence of the little creatures as common objects may not be suspected, or at least rationally realized. To be sure much is said of the life of a drop of water or other fluid; but a large amount of this sort of retailed information is purely imaginary, having nothing or little of truth about it. The fact is, pure water, such as is taken from a good well or spring has absolutely no life in itself, nor are there in it any living things whatsoever, no matter what magnifying power one examines it with. On the other hand, there are no other living things in nature, from the highest to the lowest, so widely distributed in the earth, the air and the water, throughout the world, so commonly and multitudinously present near us, and on us, and in us, as the various kinds of these microscopic organisms of which we now write. If pure well water does not contain these or any other living things, all foul waters do. *Bacteria* or their allies exist in countless myriads in all filth, in all decomposing vegetable or animal matter whether ill-scented or not, in all organic substances undergoing apparently spontaneous change, as heating in the mass, becoming sour, rancid or putrid, and, generally, those changes known as fermentation or decay.

The water from ill-scented cisterns, and indeed from many in which odor is imperceptible, contains varying numbers of these minute living creatures. The water of foul ditches, stagnant ponds, marshes and sloughs teems with them in numbers surpassing those of the leaves of the forest; a drop under the microscope often presents a maze of living forms, more wonderful than imagination ever pictured or fiction invented. The waters of running streams are more or less inhabited by these; and the ocean itself is the special home of peculiar kinds.

The air may, like water, be absolutely pure or clouded by innumerable numbers of the almost imponderable, but living, multiplying things. Wherever there is floating dust of organic origin, they may be said to be certainly present. The stifled atmosphere of close apartments and of thickly built streets, especially over decomposing filth, is laden with various forms of *Bacteria* and allied organisms; and these are unavoidably inhaled by ourselves with every breath inspired. But in the dry, open country, few of them can be found in the pure, fresh invigorating air, and over wide desert regions and the tops of high mountains none what ever exist. With us the air in winter, especially when the earth is long covered with snow, becomes almost free, while in midsummer and autumn, especially after damp and close weather, their myriad numbers are wafted to and fro by every movement of the freighted atmosphere.

The slime on vessels with standing water, on the surface of vegetable or animal substances, like cold articles of food set away for some time, *e. g.* boiled potatoes, cooked meats, etc., is composed of these organisms and their products. Brewers' yeast, used in bread making, is not a *Bacterium*, but it is a related growth; and the so-called salt-rising, not unfrequently used in making bread, owes its energy to living *Bacteria*. Sour milk always contains swarms of the microscopic moving things, and during the formation of vinegar from the juice of fruits, from solutions of whiskey and sugar, etc, they may always be found in similar numbers.

They are invariably present in pus from open, suppurating wounds, in the discharge from boils and tumors on and in our own bodies, and in the ill-scented accumulations of the bodily excretions, as from the armpits and unwashed feet. If they have any connection with bad odor, no one will wonder why the breath sometimes smells bad, if the material collecting on the teeth or the fur on the tongue can be seen under a good microscope. The cleanest mouth can hardly be said to be perfectly free from these active organisms; while those to which the tooth-brush or its equivalent is a stranger, are veritable culture boxes, or hot houses, richly supplied with rapidly growing and prodigiously multiplying forms and kinds. We swallow them with our food, and, at least some kinds, sometimes retain their activity in the stomach and intestinal tube. It now seems certain that the latter is always inhabited by special kinds which have to do with the activities there in operation. In health the blood is usually quite free from them, but in certain diseases this too, as it rapidly courses through the arteries and veins, sweeps along in the current myriads of the minute but living and developing, ever active things, inappropriately called "germs." We may well say in such cases that "the blood is out of order."

What perhaps more than all else gives vivid interest to our microscopical studies of this sort, is the fact that special kinds of these tiny living beings are found uniformly in connection with the severest diseases known to man, either of himself or of the plants and animals about him. We may name as examples "blight" in pear, apple and many plants; hog and chicken cholera; pleuro-pneumonia and splenic fever in cattle; malaria, typhoid fever, diptheria and small-pox in man. What the connection is between the organisms and the diseases we leave for another part of this paper. Very recently it has been fully demonstrated, that consumption, the most terrible scourge of the human race, invariably has its accompanying specific form in the diseased tissues and the exudations from them.

It will thus be seen that these microscopic organisms are by no means unusually or uncommonly present about, upon and within us. Taken as a classified group, they are more widely dispersed and dwell more numerously everywhere, in everything, than all other living things put together. For the truth of this statement I need only to appeal to the observation of any one, who, having a good compound microscope, will take the trouble to state the facts as seen. Still it would be unfair to leave the impression that any one specific kind is thus invariably near us, or that the most common, taken as a single species, is as widely and thoroughly disseminated as might be inferred from the foregoing. The statements made have reference to the numerous species comprised in the entire group, not to certain ones. It is one thing to say, that birds are very widely dispersed over the earth; it is quite another thing to state the facts as they are, concerning the common domestic fowl or the snowy owl.

2. COLOR, SHAPE, SIZE.

As a rule *Bacteria* are white, so that when numerous in water the fluid is opalescent or milky. They very frequently settle down, when the proper food supply is exhausted, to the bottom of the containing vessel, and in this case form a white shiny or flocculent mass. But of numerous species, each has its peculiar color, as red, blue, yellow or green On the moist surfaces of prepared articles of food, as of cooked potatoes, bread, cheese, rice, etc., spots of a red color much resembling drops or splashes of blood are not uncommon. Formerly these reputed blood stains were regarded with superstitious wonder, and have been held to indicate guilt and the anger of God. These, as well as other colored spots and pigments, are now traced to their true cause, and are found due to the distinct color of organisms themselves, or the chemical combinations which they produce.

The different kinds of *Bacteria* vary in shape from spherical to oval, cylindrical and thread-like, and the latter are straight or crooked, or spiral, flexible or rigid. The spherical ones are often connected in twos or more, and sometimes form bead-like strings or chains. The main classifications in use are based on the form and size of the organisms.

It was impossible to know anything about *Bacteria* until after the invention of the microscope, because none of them can be individually seen with the unaided eye In transverse diameter, one-twenty-five thousanth of an inch is a very common measurement, while some of the spherical ones are even less than half this size. Now, a dot one two-hundredth of an inch across is barely visible to the eye of most persons, hence a magnifying power of more than one hundred times across (ten thousand in area) is required to barely see a common sized *Bacterium*. To make out its real shape and any details of structure, ten times the enlargement mentioned is required, and not unfrequently as much more as can be secured by the highest possible powers of the microscope. Increase the height of an ordinary man one thousand times and his head would be over a mile above the earth, yet under the same magnification one of these organisms would have plenty of room to swim freely, to stand on end and dance up and down in the film of water included between two pieces of flat glass pressed close together so as to adhere by capillary attraction. From one hundred to two hundred and fifty of them placed side by side would be required to stretch across the ordinary thickness of book paper. They are the smallest living organisms known to man, yet, as we shall see, by no means the least important in the economy of nature.

3. MOVEMENTS.

Bacteria have sometimes been divided into groups on their apparent ability to move or not; but further study has demonstrated that many, if not most, species have states in which they remain at rest, and others in which they are freely motile. These states depend partially on their progress of development, partly on the surrounding conditions. For the latter the degree of moisture and temperature, and the food supply, are especially effective.

Some species at most only oscillate and quiver in the fluid medium in which they grow, never making progress in any given direction; others slowly and smoothly glide along in a straight but more often undulating path, while still others whirl, and dance, and roll, turning over and on end, now spinning round and round, now swaying gently back and forth, now darting like a flash across the microscopic field. Sometimes they move as though perfectly free and had abundant muscular force, at other times they appear to be struggling to overcome obstructions, or to free themselves from some impediment. Not unfrequently they may be seen to carry along little adhering extraneous particles, well showing their vital power; or two, in some way attached, pull in opposite directions with varying advantage for the one or the other.

No one, having once seen the motions, can doubt the inherent power the little things possess, or can question their right to be classed as living objects; whether as animals or plants will depend on his previous information and experience, as well as upon what he sees. How they move, that is, by what sort of organs or mechanism, is not easy to make out; but they have this power only when immersed in a fluid medium. When dry they are motionless except as carried by external agents, as air currents.

It is now well known that different species have different methods and facilities for dissemination. Many kinds are externally viscid, or are always when moist imbedded in a mucilaginous exudation, and hence in either case adhere to any solid substance they may touch. These, therefore, are rarely found floating in the air. So long as the material containing them does not become dry and then pulverized, such species are not distributed by the currents of the atmosphere. It is quite possible that a foul drain or a filth-filled cesspool may contain myriads of disease-producing *Bacteria*, which are only taken into the human body by swallowing them in contaminated water, the vitiated air though laden with fetid gases being harmless. Yet this can by no means be said of all species known to be injurious to man. Their great numbers, their exceedingly minute size and their powdery character in mass, together in many cases with their long continued vitality, preeminently fit them for aerial distribution. The dust made evident by a sunbeam is often in considerable portion composed of these specks of living matter, which only await suitable conditions for growth and development. What intellectual light the careful study of such a sunbeam may throw upon knotty questions of vital importance to man!

4. STRUCTURE.

Small as these organisms are, they possess well differentiated parts which are each, presumably, absolutely necessary for their existence as living things. We do not infer that structure is life, but there is every reason to believe that life is just as dependent on structure in these simple and low forms as it is in the highest plants or animals. Solution, separation of parts, can no more take place in the one than in the other, without destruction of life. Liquids separated from solids, never possess, nor are possessed by, the life principle, whatever that is. Think of dissolving the body of a mouse in acids, and then, by proper chemical manipulation, collecting every atom of the original substance, and forming by this means a living mouse. There is, however, just as much ground for the supposition that this can be done with the mouse, as there is in the case of the minute things of which we now write. To be sure there is not so much complexity of organization; but there is quite as constant a certain and characteristic structure on which life depends.

Bacteria, like other living things, are composed of cells, or, perhaps it is better to say, each *Bacterium* is an organic cell. There is an outer wall or membrane closed on every side like the skin of a raisin, and within this envelope there is a plastic substance forming the entire contents of the cavity. Chemical reagents show that the outer membrane is made up of cellulos, the substance of which wood consists, everywhere forming the framework of all plant structures. This at first is uniformly white, but becomes variously stained, as in the heart wood of trees of different kinds. It is, except in peculiar states, insoluble in water, but swells and shrinks from its power of absorbing and again giving up this liquid. Fire destroyes it, forming with the oxygen of the air carbonic acid and water.

The inner soft substance of the cell is protoplasm, which is even more common in higher organisms than cullulose, for, while the latter is confined to plants, the former is present in all living things, plants and animals alike. Taken by itself, it probably has a uniform composition in all organic nature, but it is variously mixed with other substances, rendering it difficult to determine the exact chemical components. Besides, however, the carbon, oxygen and hydrogen of cellulose, it invariably has nitrogen, which cellulose does not have. Though usually semi-fluid, it also is insoluble in water. Heat coagulates and thus destroyes its functional activity, kills the organisms. Not the least instructive is the power of motion possessed by protoplasm. Its mass is often agitated by internal currents, made evident by little granules, carried along by the stream. Sometimes these granules remain for a time at rest, then start off in an irregular line across the cell, rolling and tumbling on the way. These motions are not easy to see within most *Bacteria*, but are readily enough made out in some of the larger kinds.

This is the simple structure of *Bacteria*, a minute cell with an outer cellulose wall and protoplasmic contents. There are no organs or appendages, save in some and perhaps all motile forms there is at one, or at most two points, an exceedingly fine hair-like appendage, to the vibrations of which the movement of the organism is attributed. This fine cilium, or flagellum, as it is called, is a difficult thing to see even with the best microscopic equipment and the most expert manipulation, partly on account of its exceeding fineness or thinness, partly from its rapid vibrations. Sometimes by introducing a weak solution of iodine, so as to gradually subdue the movement, the cilium can be made out when not practicable otherwise.

5. Reproduction and Development.

Bacteria increase by one dividing itself into two. There is no such thing as sexual differentiation, nor is there in the development any thing comparable to the germination of a seed. Division is affected by the formation of a transverse partition or septum of cellulose across the middle of an adult cell, thus making two compartments. Separation gradually takes place through the outer wall and middle of new partition with a rounding off of the contiguous parts; while, during the same time, each half grows to the size of the original whole; thus one becomes two, each of the latter being in every way similar to the first. Under favorable circumstances this process may in some species take place within one hour, then in the course of another hour be repeated, and so indefinitely.

If we pause to rationally comprehend this rate of increase, we shall soon be lost in the amazing numbers which in a little time spring from one. It may seem incredible, but any one may readily verify the fact that according to this rate the number after twenty-four hours will be more than sixteen millions, and after forty-eight nearly three hundred billions. Cohn has computed that *Bacterium termo*, a very common species in putrefying organic matter, would, at the end of twenty-four hours, at the above rate of increase, fill a litle cube one thousandth of an inch across each side; after forty-eight hours the solid mass would amount to about a pint; then of course at the end of another hour, since each one would become two in this time, there would be two pints, in two hours four, in three eight, in four sixteen, etc., and such is the astonishing increase by this geometrical progression, that at the end of five days from the beginning, the mass arising from one of these exceedingly minute creatures would be sufficient to fill completely full, or to equal in weight the water of, the oceans of the world.

Incredible as this seems, it is a simple calculation which any one can make on the supposition that the organism is one twenty-five thousandth of an inch in transverse diameter and twice as long, and that the number is double every hour. That nothing like this ever really occurs in nature for any consecutive number of hours, we need not be told; but this only shows the harmonious interaction of causes and effects among the sum total of forces and activities on our earth; it is not because this bacterium under the assumed conditions does not increase at the marvelous rate stated, but because such conditions do not continuously exist. The limitations are fixed by the given supply of proper nutriment, the absence of harmful chemical compounds, temperature, electrical and mechanical agitations, the effects of other living organisms, etc.; nevertheless the computations prepare us for the acceptance of facts which would otherwise be deemed incredible, and they aid us in the explanation of observed phenomena. When it is known that a certain species may reproduce itself with anything like this rapidity, we need not wonder that individuals are found, after a short exposure of the nutrient substance, in innumerable great numbers, and, if there is any chance for one or more of such individuals to gain entrance in the first place, we need not resort to speculations concerning spontaneous generation, or transformation, to account for the subsequently found multitudes.

But some species seem never to grow or multiply rapidly, even under the most favorable conditions. Species differ among themselves like those of higher plants. Some varieties of the cultivated radish may have two or even three generations in a season, while others require two years to perfect seed. Some weeds come to maturity in a few weeks and produce thousands of seeds, while an oak lives through the centuries.

In the process of self-division complete separation may or may not take place. There is indeed considerable variation in this respect even in the same species, according to external, and, perhaps, internal conditions. If after the transverse dividing septum has been formed, further separation does not take place, the result is in a little time a filament, made of cells placed end to end, and either quite smooth and of uniform diameter or more or less constricted at the joints so as to be bead or chain-like. In this case, however, each link is really a distinct individual so far as its physiological functions are concerned, and life is in no way interfered with if they are mechanically or otherwise separated. In one genus (*Sarcina*) division appears to take place in two directions, transverse and longitudinal, so that little regular squares of cells are produced, four or sixteen being frequently seen associated together in order.

The individuals of certain species cohere together without order in a somewhat compact mass called *zooglœa*, bound, it is thought, by the glairy substance in which they are imbedded. But this is the case only in special conditions or states, for it is easy to see single ones free themselves from the immovable mass and swim away in the liquid in which the whole are submerged. The *zooglœa* mass may be the result of the multiplication of a single cell or those originally separate may become thus united.

Besides the method by division, several species are known to reproduce themselves under certain conditions by what are termed spores. The protoplasm of a cell becomes consolidated into a spherule occupying only a small part of the cavity. This afterward becomes free by the dissolution of the old cell wall and, at the proper time, under the proper conditions, the spherule develops into a full sized cell like its parent form. The formation of such so-called spores seems usually to take place when the nutriment is nearly exhausted or when not suited either in kind, or in the required state as to temperature, etc., to the regular growth of the organism. It is a method of self-perpetuation rather than of multiplication. Still, in a few cases of which record has been made, more than one spore is produced by each cell. Touissant, of France, has seen within the cavity the formation of spore sacks (*sporangia*) each of which produced from three to six spores.

It is often in the form of these all but infinitesible spores that *Bacteria* are carried in the atmosphere. When produced in liquid they fall to the bottom after the dissolution of the old cell wall, and form, when numerous enough, a plainly visible, white sediment. In case the water is then evaporated the sedimentary material becomes a fine powder the particles of which readily float in the moving air.

6. VITALITY AND ENDURANCE.

Moisture is essential to the growth of *Bacteria*, but prolonged drying does not necessarily kill them. In the case of the species causing the blight of pear and other plants, they certainly lose little or none of their vitality by preservation during two years in the dry state on the point of a quill. Among those kinds producing spores the adult organisms often do not live more than a few days or weeks, while the spores seem to absolutely defy time. Pasteur thinks he has shown that the latter retain their vitality in the earth out of doors for at least twelve years. After keeping in a sealed tube four years, some virus of splenic fever was sent from England to this country, where it was opened and used with fatal effect in inoculating animals. It has even been argued by some investigators that *Bacteria* never die except as destroyed by fire, or injurious chemical compounds, and whatever may be the case otherwise, so far as age is concerned this is true, for on account of their manner of propagation an individual does not grow old.

Each species is adapted to a certain best temperature from which variation may take place, within only very narrow limits in some kinds, or a wider range with others, (75° to 105° F) None appear to be killed by cold, but their vital activities cease at given limits never reaching below the freezing point of water. An artificial temperature of –123 F. has been tried without killing them On the other hand not only is the limit of activity reached by increase of temperature, but death always ensues by exposure to a given but greatly varying degree of heat for different species. Spores immersed in the fluid resist for a time the heat of boiling water, but all adult forms are killed in this way When the medium is alkaline a higher degree of heat is required to destroy life than when neutral or acid, and if the organisms are dry a still higher temperature may be withstood; 140° F in water, fruit juices, vinegar, sour milk, etc., is absolutely fatal to such as ordinarily occur in these fluids The highest temperature yet known at which any *Bacteria* are able to live and develop is 158° F. This has been observed in an infusion of beans. But some spores are not killed, especially in alkaline fluid, by prolonged boiling, just as some seeds withstand a similar test. If either are softened by germination, they quickly succumb.

We make use of these facts in the operations of every day life, especially in the processes of canning articles of animal and vegetable foods.

Various substances destroy *Bacteria* or at least prevent their propagation in nutritious solutions. Of these the best known and most widely used are carbolic acid and quinine. Several others are more deadly to the organisms than these, but either have some objectionable properties, or have not been so generally introduced.

Grace Calvert asserts that some *Bacteria* can live in pure carbolic acid, but hundreds of experiments prove that none are developed in a liquid containing one-half per cent. of this antiseptic.

The following table from experiments by M. Jalan De La Croix (Revue Scientifique, Feb. 4, 1882,) shows the number of parts of water to one of the substance named, which barely permit the development of *Bacteria* in infusions of meat. For instance if thirty parts of water are mixed with one of alcohol, organisms may infest the mixture; but if twenty-nine parts of water are used to one of alcohol, *Bacteria* do not develop, and the mixture does not ferment.

Alcohol	30	Etherial oil of mustard	5734
Chloroform	130	Sulphurous acid	7534
Soda biborate	107	Alum acetate	7535
Eucalyptol	308	Salicylic acid	7677
Phenol (carbolic acid.)	1002	Mercury bichloride	8358
Thymol	2229	Lime hypochlorite	13090
Potash permanganate	3041	Sulphuric acid	16782
Picric acid	3041	Iodine	20022
Borated soda salycilate	3377	Bromine	20875
Benzoic acid	4020	Chlorine	34509

These results seem to be trustworthy, though others very dissimilar have been published. It is not a sufficient test to observe through the microscope the effect that any substance has upon the motions of *Bacteria*. Sometimes the addition of pure water causes their motions to cease, and sometimes molecular oscillations, not always easy to distinguish from those of life forces, continue after the organisms are dead. This has, no doubt, been a source of error in some of the accounts given to the press. The above figures were arrived at by trying more and more water to one gramme of the substance until at last *Bacteria* developed and putrefaction set in.

It should be said that it is well nigh impossible to kill *Bacteria* in the air by any kind of fumigation except in a very thoroughly closed space, like an air-tight vessel or box. A mistaken sense of security often exists when the atmosphere of living rooms, sick-chambers, etc., is pervaded by the odors of some supposed antiseptic material. These floating "germs" can at least withstand as much fumigating as any human being. On the other hand, much can be done towards destroying noxious *Bacteria*, or preventing their growth and propagation, by impregnating liquids and solids by proper amounts of such destructive agents as are enumerated above. Experiments are now in progress of treating the carcasses of slaughtered animals with antiseptics not poisonous to man, for the purpose of sending fresh meat without ice across the ocean or other similar distances, and the results give much promise of success. A white powder is offered for sale to keep fruit without canning, and it appears to have virtue enough to really accomplish the result claimed, without detrimentally affecting the food, (compounds of boracic acid). There is, no doubt, much to be gained of practical utility in this direction.

7. NUTRITION.

Bacteria absorb their food by endosmosis through the cellulose coating of their minute bodies. The nutrient material must therefore be in a liquid state as well as of the kind and strength suited to the specific organism. Like the more highly organized living things, each species has its own peculiar kind of food, without which development does not take place. As a cat would starve on hay and an ox on meat, so similar differences are found among these inhabitants of the microscopic world. But all require organic food derived from the bodies of higher plants or animals, though it has been sufficiently proved that at least some kinds can take the nitrogen required from inorganic sources. Bacteria, therefore, could not live alone on the earth. They are destroyers, not up-builders; they pull down and decompose material prepared by the assimilation of other vitalized workers.

Some kinds are rigidly confined to dead matter; others develop and grow at the expense of living plants or animals, causing little or no inconvenience, or even conferring real benefit to the latter, or instituting varying degrees of discomfort and injury.

The waste products of their physiological processes are as varied, after their kinds, as their food—acids, alkalies, gases, liquids, fragrant, ill-scented; but always of simpler chemical composition, until at last, through perhaps the consecutive action of several species, the elemental state is reached. Thus in the fermentations of solutions of sugar, alcohol is given off as a waste product by the "yeast plant" (sacharomycetes), and the diluted alcohol ferments through the effects of the "vinegar plant" (mycoderma); and in this case vinegar is the substance thrown off, while this in turn decomposes in a similar manner by other agents, into a carbonic acid and water.

8. ORIGIN.

The question, "Where do *Bacteria* come from?" that is, what is their original source; is sure to press itself for answer. This answer is by no means an easy one to give with positive assurance of correctness. We have already seen how they are reproduced, and the rapidity with which they may multiply, as well as something of the modes by which they are disseminated; but all thinking persons wish to know how or whence the first ones came into existence.

Upon this question there have been many experimental inquiries by the ablest investigators, and many theories have been propounded by those most competent to formulate them, as well as the crudest of unsupported hypotheses by untrained minds. Among all these opinions, we may select three as worthy of special notice. First, a spontaneous formation under proper conditions from inorganic chemical elements or compounds; second, a transformation from other living organisms or their parts; and, third, direct creation by the great author of all things.

It would require too much space to even sketch in this place the arguments which have been advanced in support of each of these theories by thorough scientists. The voluminous literature on the subject shows the interest that has been felt, and the real warfare of words that has been waged by contending supporters of their own or others' ideas.

But no one without personal bias can carefully review this literature to-day with the results of experiments clearly in mind, without concluding that the first and second have not been proved. From a philosophical standpoint, the first is highly plausible, since these organisms are admittedly among the lowest living things. If such spontaneous generation takes place anywhere in nature, we should look for the phenomenon here; but, while certain experimentors have supposed their results showed the theory true, others still more expert have uniformly pointed out the fallacies of such experiment or deduction, so that up to the present time we are bound to say the facts known disprove rather than prove the hypothesis. The second has not been so fully and conclusively studied, yet the most searching investigators have not been wanting, with, upon the whole, negative results. No untrammelled scientist conversant with the entire subject as now known, admits the proof of the origin of *Bacteria* by transformation of the parts of other plants or animals, however close and constant may be the accompaniment of the one with the other. In this statement we exclude the idea of evolution during centuries of time, the change taking place by numerous unrecognizable differences; for, to our mind, this belongs under the third hypothesis. We have, therefore, just the same scientific information about the origin of *Bacteria* as we have about that of other living things, man included. Whether we hold that the Creator fashioned each species in the beginning by a direct act, or accomplished the same by instrumentalities working through the ages, makes no difference in the question before us. We are forced to refer the origin of *Bacteria* to the same power to which we attribute the origin of man. It is certain that these minute organisms have existed in very closely similar, if not identical, forms, as at present, from remote antiquity, as is proved by the discovery of fossil remains, as well as the evident effects produced in the past ages of the world, according perfectly with those now known to be the results of their action.

It must be admitted, however, that in the progress of individual development some kinds pass through different forms, which have been supposed to be characteristic of species, and that, retaining the same form, the physiological effects may vary through the prolonged influence of certain external conditions. Thus an individual cell may be spherical, then oblong, cylindrical, and filamentous in regular sequence of growth, though each of these forms in other species may be characteristic and unchanging. And a species ordinarily living in an infusion of dead vegetation may, by a slow and gradual change, become capable of surviving and multiplying in the blood of living animals, whereas a sudden transfer from the one to the other medium would have permitted no such results. But man himself is capable of becoming adapted to as remarkable changes. We say we become habituated or acclimatized to things and conditions, as of eating arsenic and of dwelling in the malarial regions of tropical countries. No greater changes than these are known in the life history of *Bacteria*, only that it requires less time for the modifications to take place, and this should be anticipated from their rapid succession of generations.

9. PLACE IN NATURE.

Bacteria are certainly living things, hence, according to the ordinary thought and classification of objects, must be either plants or animals. Formerly, spontaneous or self-caused motion was held to be characteristic of animals as distinguished from plants, and, as many *Bacteria* are seen under the microscope to move freely and in some cases very rapidly to and fro, hither and yon, they were at one time unhesitatingly classed as animals, as indeed most unscientific observers would at once pronounce them now when viewing them for the first time by the aid of a powerful magnifier. But the fact is, self-caused motion is not confined to animals. Really all plants more or less possess this power. A seedling causes its stem to turn upward and rootlet downward through internal forces, and afterward the growing parts bend to or from the light, as every one has observed. Leaves quite generally assume different positions day and night; flowers open and close, twining plants revolve in such manner that the free end sometimes sweeps a circle of four feet in diameter about the supporting object; tendrils twine in some instances fast enough to be plainly observed by any one possessing good eyes and a fair share of patience. It is true that all the higher plants are fastened to their supporting substance, and are incapable of roaming from place to place; but the lowest members of the vegetable kingdom are not thus limited. In some conditions at least, these move as freely as any animals, whether high or low, not simply through the controlling influence of external agents, but from forces wholly within themselves. Such motile plants are all microscopical in size, but no botanist or zoologist hesitates to pronounce them true plants, having all the fundamental characteristics of members of the vegetable kingdom.

So freedom of motion of itself, however striking it may be, is not sufficient cause for classing *Bacteria* with animals. But it has been before stated that the outer coat or wall of the organisms is composed of cellulose, and this is peculiarly a substance belonging to all plants, and only with very rare exceptions to any animals. It has also been mentioned that *Bacteria* are capable of taking the nitrogen required for their nutrition from inorganic salts, and this is alone characteristic of plants. There are no exceptions on the animal side.

These and other reasons have, in recent times, caused all naturalists, who have made these objects a special study, to pronounce them plants. There is no difference of opinion among proper authorities if the choice is limited to one or the other of the two great kingdoms of animated nature; but Haeckel, a German scientist, has proposed to take the lowest forms of both these kingdoms and constitute therewith a third called *Protista*. In this case the *Bacteria* would be called neither plants nor animals. As plants, the *Bacteria* certainly occupy a position at or very near the bottom of the scale. They are among the simplest in structure of living things, and include among them the smallest objects in nature animated with a spark of that vitality whose nature and essence is as unknowable in them as it is in the being created in the image and likeness of God.

There is a further and undecided question as to whether the *Bacteria* belong to the *Fungi* or to the *Algæ*, two great divisions of the vegetable kingdom; but this depends solely on the definitions given to these groups. If greater prominence is given to form and habitat, they more nearly resemble the *Algæ* or sea weeds; if physiological functions are decisive, then the *Bacteria* are unquestionably

Fungi. This is now less important, since in a strictly natural classification it is undecided whether or not the great groups known as *Algæ* and *Fungi* are entitled to remain as such. Probably not, in which case the term *Protophytes* will almost surely be uniformly adopted to designate the lowest division of the vegetable kingdom, and in this the *Bacteria* will presumably occupy the lowest place under the ordinal name of *Schizophytes*, a word now in use, and meaning dividing or splitting plants.

PART II.—EFFECTS OF BACTERIA.

1. Fermentation and Putrefaction.

Until within recent times it has been supposed that organic matter, dispossessed of the vitality to which it owed its existence, was naturally very unstable in its chemical constitution, and that its tendency was to go back to the elementary inorganic state, through the operations of simple chemical affinities. The soft parts of animal bodies have been considered especially liable to change after death; indeed this is now so common and constant a phenomenon that it is looked for as a matter of course, unless express provision is made to prevent it. We are surprised when told that during the summer season the fresh flesh of buffalos on the western plains, remains sweet and perfectly good until dry in the warm open air. The astonishing story is repeated again and again that the bodies of the woolly elephant of ancient Siberia, have been taken out of the ice in which they perished long ages ago, yet with flesh still so fresh that dogs feed upon the carcasses.

The scrupulous care which we are obliged to take to avoid ill consequences to butchers' meats, makes these exceptional instances of preservation in nature really wonderful to us. We say the law is for such material to putrify and decompose, for milk and cider to sour, for the expressed juices of fruits to ferment, and the fruits themselves to decay. A pile of green herbage heats and rots, and wood exposed to moisture gradually loses its strength and disappears to help form vegetable mould.

These various changes, to which all dead organic matter is subject, going on about us so abundantly and so constantly, make up a large part of the physical phenomena of the world, we expect them to occur and recur with the same certainty, if not the same regularity of time or rate, as the fall of unsupported bodies to the earth, the planetary changes and the succession of the seasons. We just as much expect fresh meat to spoil in warm summer weather as we do enkindled wood to burn. The wine-maker counts just as certainly upon the fermentation of the juice of the grape as the engineer upon the pressure of superheated steam, though neither the one nor the other may stop to consider the philosophy of the phenomena with which they are respectively confronted. They have ascertained by experiment the governing conditions, and proceed with the confident assurance of, what has been will be.

Now to those who herein read for the first time that dead organic matter has in itself no such tendency to spontaneous change, that, subject, as in nature generally, to all the activities of pure air and pure water, and to these alone, whatever the temperature, dead fish and flesh will not become ill-scented or putrid, that milk and blood will not change from the condition they have when drawn from the living animal, that a heap of green or wet grass will not heat and rot, that moist wood will remain as durable as granite,. and that the substance of their own bodies after life has departed is as incorruptible as gold, these words may seem foolishness and upon the face of them absurd. Yet this is the teaching of science, and is the unavoidable conclusion from many instructive experiments. When the whole facts are known, the wonder is rather that the flesh of slaughtered animals so surely putrifies with us, not that as a rule fresh meat exposed to the pure air of the western plains should remain forever good. These facts could never have been known without the aid of the microscope, and since this wonderful instrument is of modern invention, the knowledge set forth in the following pages has been gained alone by modern investigation. If there is still doubt about the matter as a general phenomenon, it is only because new ideas are slowly accepted; if there is dispute among the informed as to details of the processes, it is mostly because so few really competent experimenters have yet undertaken the delicate but fruitful work.

The marvellous progress of modern science is based on the well grounded idea that every effect has an adequate cause, and that these causes, in the material world at least, are subject to undeviating law. If a body moves, the force is sought, and usually not in vain, which produced the motion. It change occurs, a competent agent is at once supposed to be instrumental in its accomplishment. Students of nature are not content with passing anything as mysterious which can be brought within the domain of knowledge, nor with accepting as a fact anything which does not fall within the reign of natural cause. Possessed of this spirit, and provided with the necessary instruments and means, the subject before us could not escape investigation by the quickened intellects of recent times. The result is, after much conflict of opinion and difference of interpretation, the established fact that the natural changes taking place in non-living organic matter are all due to the vital activity of living things. Some of the usual results of life forces may be accomplished in the chemist's laboratory, but the processes and conditions there and in nature are entirely different. What life is, and to what its peculiar powers are due, we do not know; but we do know its effects, and these are as pronounced and unique in the natural destruction as they are in the original up-building of organic matter. Life manufactures, and life in turn pulls to pieces and destroys. An organic body is not a watch, which, having been wound up, runs down of itself; but it is a splendid temple, the rich material of which, accumulated from all lands, would require the same as its original freighting for its re-distribution. But the low, microscopic organisms are by no means alone, if they act in any sense different from other vitalized beings, in the work of destruction. Every living creature is continually destroying itself; reducing, through its physiological and normal processes, the solid parts to liquids and gases—from the organic to the inorganic. This is the waste which all plants and animals suffer as long as life continues. After death waste goes on in a different way, through the physiological and normal activities of other living beings, and the more noticeably because there is no repair.

Among these latter destroyers there are very many kinds of animals and plants. Indeed, all animals are included in the list, and the digestion of food with them is always a work of destruction, as is readily understood. There are among flowering plants certain kinds which are also purely destroyers. The dodder, or golden thread (*Cuscuta*), found sometimes in a tangled profusion on weeds, flax, clover, etc., is most common with us. But it is to the *Fungi* that we must look for the principal agents, of the plant kind, which act as pure destroyers of organic matter. These degraded plants live only on the accumulated and organized products of other plants and animals, assimilating a portion for the architecture of their own bodily structure, and exhaling another very considerable part as waste, in one shape or another, but ultimately of carbonic acid and water, two prominent ingredients in the original nutrition of green-leaved plants. An old log in the woods, having no inherent tendency to decay, and resisting much better than iron the slow corrosion of the oxygen of the air, tumbles to powder under the digestive power of insects, toadstools and *Bacteria*, working differently, but accomplishing nearly the same result.

It has already been said that in their physiological effects, at least the *Bacteria* are *Fungi*. Their food is organic, elaborated, in the first instance, if not direct, by green leaved plants. Their function is to destroy, like that of other colorless plants and all animals. In this process of destruction, peculiar and characteristic effects are usually produced by each species, and in very many cases each species is limited to some special kind of food material. In this there is nothing new or strange, for the law holds good throughout all nature, among all animals and all plants.

If now we remember the facility of distribution which these minute organisms enjoy, their vital endurance and their wonderful powers of reproduction, we need not, after all, be surprised that milk, wherever left exposed under the proper conditions of temperature, etc., becomes sour through the agency of a living organism developing in and feeding on some element or elements of its substance, or that fresh meat becomes ill-scented through the respiration of similar living things, acting in a similar way. Keep these destroyers out, and no such results would occur. In wide arid regions, where there is but little material on which they may develop, their uniform presence in the air or on the surfaces of solids cannot be expected, and this is the secret (now a secret no longer) of the fact that meat keeps without putrefying. Since the white man has made his habitation in the West, where the old hunter used to expose his jerked buffalo with impunity to the warm sun and air, this can no longer be done with butchered flesh. But it is still found possible on these wind-swept plains to keep meat fresh for a considerable time, by sticking it on poles high above the earth, above the usual dissemination in these places of living organisms. The same thing is true on high mountains, though the warmth of the sun may be fully sufficient during midsummer for the manifestation of all kinds of life, and of rapid changes in putrefactive substances.

Among the destructive alterations of organic matter, those known as fermentation and putrefaction are peculiarly the effects of certain species of the low plants of which we write. Because the latter are so minute, they are not commonly known to be present; hence the popular idea that the processes are spontaneous, due to the nature of the material in which they occur. The French Count Appert, early in the present century, working under the idea that the oxygen of the air is the active agent in these destructive changes, devised the method now so largely adopted of hermetically sealing fruits and meats. He fortunately hit upon the plan of expelling the air by heat, and of closing the vessel while the contents are hot. The result is what he hoped for, the indefinite preservation of the material. This explanation, though the only one known to many to-day, is absolutely false, as has been clearly shown in several ways. It is by no means necessary to exclude the air; it is only essential that living things adhering to the surfaces of the fruits, etc., and often contained in the air, be prevented from developing and multiplying in the substances. The heat destroys such as are in the vessel, either on its own interior surface or on the fruit, and the closing while hot prevents the entrance of fresh germs. A can of such preserved material, opened in summer on the house top in the country, might not spoil for many days or weeks. In such an experiment care should be taken to keep the article to the windward of the person, for obvious reasons. In a warm time during winter success would be much more certain. Two years ago I found that milk taken direct from a cow in a heated glass fruit jar, with the simple precaution of previously washing the udder and adjacent parts, and closing the jar as soon as possible, often kept sweet and fresh many times as long as that left open in a clean milk room.

I now proceed to rehearse the results of some more careful and conclusive experiments, which, it must be admitted, fully substantiate what has been said about fermentation and putrefaction being due to living organisms instead of to the air or any quality of the experimental material.

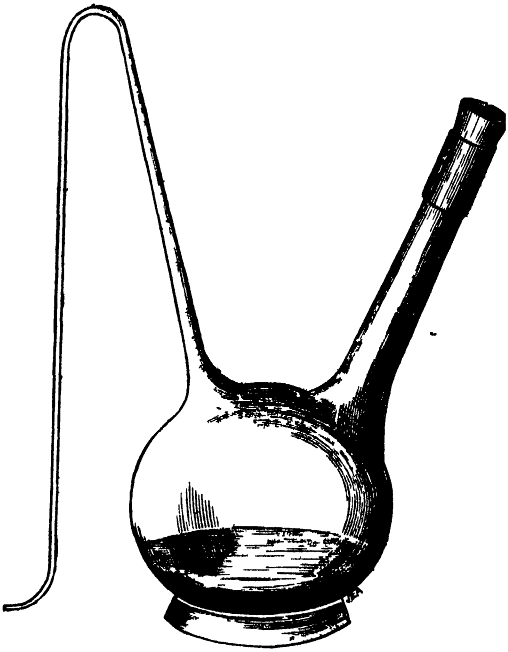


Figure 1 represents a little glass flask invented by Pasteur, of France, for the purpose of making pure cultures of certain kinds of these minute organisms. The drawing was made from one of several in actual use by the writer, made at the chemical laboratory of the Industrial University. It will be seen to consist of a little bowl of a capacity of about one fluid ounce, and from this arise two tubes, one of which is surmounted by a short piece of rubber pipe containing a glass stopper; the other long drawn out and bent downward, the descending portion being very fine, with an internal continuous cavity about the diameter of a medium-sized horse hair. The end is left open.

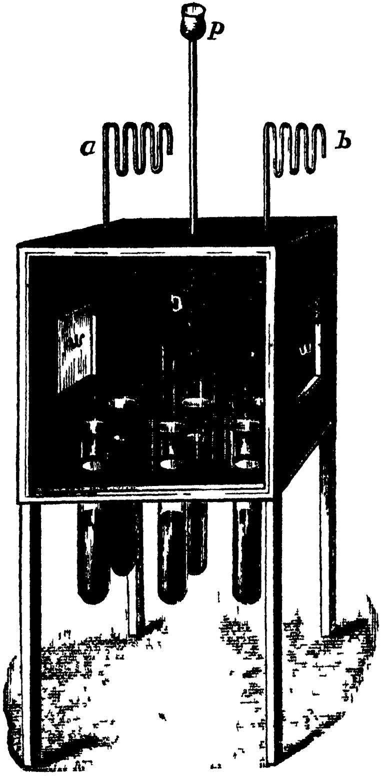
For our purpose we may take any fermentable or putrefactive infusion, as of hay or chicken broth, filter to remove the solid particles, that we may better observe what does or does not take place, and fill the bowl of the flask through the stoppered tube. We now hold the flask over a flame until the fluid boils and the steam passes out of the larger tube, which we close, having previously passed the stopper through the flame. The steam is permitted to rush out of the fine tube for a little time after which we hold the fine open end in or just above the flame until the steam within the flask is condensed by cooling, and the inrush of air ceases. We have now only to set the flask aside and watch results. If any change takes place. as a scum forming on the surface, a mouldy growth on the glass, or a sediment settling on the bottom, it can readily be observed; if not, we may see that the clear liquid continues limpid and pure.

Let us examine closely the conditions, supposing the temperature to be that of warm summer weather. We use a fluid which, freely exposed to the air or enclosed in a bottle without subsequent heating, would rapidly ferment or putrefy, becoming turbid and milky, and with, if soup, a slimy scum forming on the surface, and withal an odor so characteristic that we shall know well enough what it means. By boiling in the flask, any living organisms in the liquid, or attached to the interior of the vessel, are killed; and by holding the minute opening in the flame—taking care that the glass is not melted—until after the condensation of the steam by cooling, there is afterward no strong inrush of air through the open tube. Now all living things, no matter how large or how small, have solid parts, and are really heavier than the air, so that howsoever minute, they can not float in the latter, except as swept along by currents; hence, though by every alteration in temperature, without or within, there will be slow interchange of air, the minute solid particles of the external atmosphere are not likely to be carried up the fine tube and over into the liquid, which is therefore exposed to pure germless air. I have now such a flask filled nearly two years ago with filtered chicken broth, which is as clear and sweet as when first made, and this has been kept on a shelf in the laboratory where the temperature has been very favorable to putrefactive changes, and where, from the use of the room, the air is unusually laden with organic dust.

On the same shelf are other flasks of similar kind, some of which after keeping for some months in the condition of the one described, have been unstoppered for a few minutes, and then closed again with sure petrefaction as the result. Sometimes simply shaking is sufficient to start this process, showing well enough the preservation was not due to any want of susceptibility of the liquid to such change. If, however, we take the precaution to hold the larger tube over a flame, we may open and close it without such results, and in this way we may from time to time microscopically examine the liquid by taking a drop upon a previously heated glass rod. While the liquid remains limped and sweet, no organisms are found, but they always swarm in profusion when visible changes take place.

A successful experiment of this kind seems to prove two things: 1st, that the potential factor in fermentation resides neither in the substance itself nor in the pure air; 2d, that organisms do not spontaneously develop from germless material.

Tyndale, of England, has taught us another mode of experimenting to gain answers to the same questions. He constructs a wooden box with a back door, glass front and side windows, and through the bottom several test tubes pass, air tight. Through a hole in the top, fitted with a sheet of India rubber and a stuffing box of cotton wool wetted with glycerine, a long glass rod with a funnel above may be thrust to fill the test tubes, and two sinuously bent glass tubes pierce the top for the admission of air without dust, as explained in the account just given of Pasteur's flask. The interior is moistened with glycerine, and the box closed.



By passing a beam of sun or brilliant artificial light through the windows it can be readily ascertained when the floating matter has settled and the air is pure, after which the test tubes are filled with putrescible liquid, which is now boiled by heat applied externally. We notice that the boiled infusion is freely exposed to the air of the box as well as to the outer atmosphere through the bent tubes, and that the only precaution taken is to allow time for all minute solid particles to settle in the still air of the chamber, to whose moistened surfaces they adhere. Hundreds of tests have been made in this way by Professor Tyndale, with the most satisfactory and positive results, with very many kinds of putrescible substances, as natural animal liquids, infusions of flesh, the *viscera* of animals, of fish and of vegetables. The perfectly sweet and limpid filtered infusions remained in this condition for months, while outside of the moteless box in the same room, they became putrid and offensive in some hours. It was sufficient at any time to open the back door of a box, if but for a momont, to secure these latter results in the experimental test tubes. In the clear unchanged liquid living organisms were never found; in the ill-scented turbid ones, these always existed in countless numbers. What can be more instructive. What better demonstration could we wish of the non-occurrence under usual circumstances of spontaneous generation of living organisms, or of the stability, without these, of organic substances?

2. Diseases of Plants and Animals.

From the earliest times many of the diseases of man and of the domesticated animals have been known to be contagious, *i. e.*, capable of being transmitted from a diseased to a healthy subject, while some that are now known to be propagated in this way were looked upon as peculiar visitations of Providence for supposed sin—the fact of the contagion not having been observed. There have also been from earliest history many speculations as well as careful studies, upon the nature of the poisonous or contaminating principle, and physicians ever since their art has been practiced, have endeavored to find out remedies by experiment. Among the diseases of the human skin that is happily much less prevalent now than formerly, the itch was the subject of extended and warm controversy from the twelfth to the eighteenth century, among Arabian, Italian, French and German physicians and scientists. Some held that want of personal cleanliness was the sole cause, and that the disease might spontaneously appear at any time and place, given only the proper conditions. Others found a minute living, crawling, egg-laying inhabitant of the diseased skin, and attributed the ill-effects directly to its work. Then came learned disputes as to whether this living thing did or did not originate from the filth, and whether it came as a consequence simply, or was verily the exciting cause of the disgusting malady. The literature upon the subject is very full, and if in those days they had possessed an aptitude for putting things in type, it would have required a library of books to contain the discussions.

Practicing the experimental method, some investigators at last put the living creature separated from the *debris* of the diseased skin, on their own bodies, and watching its operations established its true parasitic nature.

The agent, a mite, popularly called an insect, is propagated only from eggs laid by parent individuals, and thus maintains its specific identity. Its life history having been satisfactorily made out and its mode of operation fully made known, it is no longer a subject of dispute; but the history of the controversy is a valuable one in our present studies. Knowing the facts, we now smile at the absurdities of the opinions held, and the foolishness of the supposed proofs upon which these opinions were founded; yet these were not cruder nor farther from the truth than are many of the speculations and incredulities of our times concerning "disease germs."

While an illustration of this kind can not be taken as evidence in the case of *Bacteria*, the same questions are now asked about, and the same objections made against, these latter organisms as the *cause* of disease; yet careful investigators are to-day as able to handle *Bacteria*, to see their shape, observe their manner of increase, ascertain their proper food material and find out the substances inimical to their lives as were Abenzoar and Bonomo in their time to similarly study the itch mite,—thanks to the improvement of the microscope more than anything else, except the general acceptance of the experimental and inductive method of study.

The fact is, those competent to judge now agree in holding that some severe contagious diseases of man and animals are directly due to *Bacteria*, while many scientific investigators, whose abilities can not be questioned, and who have abundant facilities and opportunities to learn and to know, claim that all diseases readily communicable from the infected to the healthy have their origin in the activities of these living organisms, and this opinion is certainly growing into wide if not universal acceptance. Other diseases, as fever and ague, not understood to be infectious or contagious, are also believed to be due to certain kinds of the same things.

Herein lies the greatest interest and highest importance attributed to these wonderful but excessively minute denizens of the, to common eyes, invisible world; and herein, more than anywhere else, rests the hope of attaining a scientific basis for medical practice, as well as a rational adoption of preventive measures against the ravages of disease. It will not do for the hobbyist to assume that all the ills that flesh is heir to can be traced to the corrupting work of "disease germs," for, as has been before pointed out, these minute things have no life functions which strictly separate them from other plants and animals. Their physiology is our physiology; they assimilate food material as we do, and, by virtue of this power, live as we live. The delicate and complicated machinery of the higher animal bodies may be put out of order in many ways, and by want of nature's harmony the normal, vital forces themselves may be the agents of disease.

But while there is no toleration for the hobbyist, those who have not investigated and cannot investigate for themselves should not hesitate to accept the testimony of capable specialists, when the latter find reason to assert that such and such a disease is due to the microscopic mischief makers *Bacteria.* Their minuteness no longer prevents the demonstration of their presence, the tracing of their development, the detection of the actual effects and the experimental testing of results. There is now in certain cases just as good evidence that *Bacteria* cause disease as there is that hawks destroy chickens, and the evidence is as inductively rigid in the one case as in the other. Even without microscopic examination, there is good reason to assert that the contagious principle, whatever it is, *grows.* Any chemical poison decreases in virulence by diffusion in a mass of inert matter, and soon loses its effectiveness; but it is the special characteristic of the poisons of which we write that a minute quantity soon infects the whole system of a large animal, and then the smallest drop of fluids from its body is sufficient to give origin to the disease in another animal, and so on perpetually. Increase has taken place; there must have been growth; only living things grow; the microscope aids us to see what this living thing is; why should we doubt?

It is true that Dr. Lionel Beale proposed a theory of disease germs, in which theory growth was accounted for by assuming that degraded, yet not dead parts of the animal body itself constituted the true contagion, and that every such living but degraded portion has the power in some way of over-mastering the healthy—a speculation which, though brilliantly conceived and sustained at the time, has not been definitely supported by later investigations, nor held with assurance by any other authority, known to the writer; though, from what has just been said, the process is neither inconceivable nor *a priori* impossible, perhaps not even improbable. The only question is, "Do facts prove it." There are indeed some experimental facts which seem to favor the idea, viz., the transmissibility of inflammation produced by chemical or physical means upon inoculation with the exuding serum. It may be said, however, that even in this there is the possibility of independent organisms being the real virus.

The first septic disease well worked out was that of *pebrine*, an infectious malady of silk-worms in France. In 1853 the production of cocoons was 57,000,000 pounds avoirdupois, and had doubled during the preceding twenty years, with every prospect of continued increase; but during the next twelve years, owing to the ravages of the disease mentioned, the production fell to 9,000,000 pounds—a loss in 1865 alone of $20,000,000. During those twelve years of national disaster, the disease had been sedulously studied by all the scientific and professional skill of the times, so far as the light of pathological knowledge then attained permitted, without practically beneficial results. In this state of things Pasteur was besought by the minister of agriculture to undertake the investigation, though this scientist had no special qualification for the work, except his natural talents and his acquirements through studies on the origin and effects of the micro-organisms in fermentations and putrefaction. Great numbers of minute corpuscles had been known during some years in the bodily tissues of the diseased caterpillars, but no one attached any importance to them. Pasteur at once turned his attention to these microscopic bodies, proved them to be living organisms, studied their propagation and mode of development, became able to distinguish infected from healthy eggs, and in September 1865 communicated his results to the French Academy of Science. His labors met with inattention or derision, so novel were they, and contrary to the learning of the time. To convince the skeptical and arouse the heedless, he selected fourteen lots of eggs in 1866, and wrote out what would be the fate of the moths hatched from them in 1867. These predictions, placed in the hands of a public officer in a sealed envelope, were exactly fulfilled in twelve of the fourteen cases, and produced the expected effect. His instructions were obeyed and France rapidly regained her great silk industry —one of the great triumphs of practical science in our triumphant century, and the foundation of an entirely new system of research in preventive and curative medicine.

Guided and profiting by Pasteur's former studies, Lister, then of Edinburgh, since of London, began in 1865 to perfect a system of anti-septic surgery, which, as introduced by himself and others, has been the means of inestimable progress in this difficult art, saving life and limb, as well as untold suffering to mankind. Unfortunately, either from the want of sufficient information or from placing too much stress on certain details, doubts are entertained by some fair-minded professional surgeons as to the correctness of the theory, though not upon the real progress that has been made. There seems good reason to believe such doubts will rapidly pass away, and the still further profit will be secured in the practical application of scientific knowledge. It is well known to veterinary surgeons that animals may be castrated by a sub-cutaneous rupture of the spermatic cords, followed by the death and absorption of the testicles, without mischief to the animal, provided the epidermis remains unbroken; but this provision is imperative. Gangrene is sure to follow if the exterior is punctured. Flesh bruises on our own bodies do not suppurate under similar conditions, and wounds made with a truly clean instrument heal by "first intention," if immediately closed and bandaged in such manner that living organisms are excluded. This result is more certainly assured by the proper application of an antiseptic dressing.

The etiology of no infectious disease is now so well understood as that known as "splenic fever," "anthrax," or "charbon" of the domestic animals, and "malignant pustule" in man. It is said between 1867 and 1870, over 56,000 horses, cattle and sheep and 528 human beings perished from this alone in a single district of Russia, while the annual loss in France has been millions of francs. This is now practically subdued by prevention of infection and by vaccination, the history of which reads like a romance, and the contribution thus made to medical practice opens up boundless visions of future welfare to man. Jennerien vaccination against (for?) small pox was the result of an acute but fortunate observation, one almost might say a lucky coincident; but Pastorian vaccination, as we may properly term it, is the outcome of methodical and precise scientific research, gaining step by step and reaching new facts by logical induction from the known. To this progress there have been many contributors, but among them it is not unjust to mention Koch, of Germany, and Pasteur, of France; the former for his splendid studies on the cause, the latter for the introduction of a remedy now adopted on a commercial scale at least in France and Austria.

The terrible disease is thoroughly known to be due to the inimical activities of specific organism, *Bacillus anthracis*, described in another part of this paper. Within the last few years certain researches have been published which seemed to demonstrate that this was a physiologically varied form of a species of the same genus common in infusions of vegetable substances, as of hay: but very recent investigations make any such transformations questionable. Pasteur's vaccination material is obtained by prolonged cultivation of the deadly *Bacillus* in a decoction of animal flesh kept at a certain temperature, in which the organism multiplies rapidly, but progressively loses its virulence. At the proper stage, the liquid swarming with this particular microphyte is used for the inoculation of animals which scarcely, or do not at all, suffer in consequence, but are thereby protected from the virulence of the dreaded parasite, in its usual condition bringing almost certain death within twenty-four to thirty hours.

As an experimental illustration Pasteur, and his co-workers made a public test, at the request of a provincial agricultural society and before a large assembly of interested persons and experts. Fifty sheep were taken from a flock and from these twenty-five were earmarked and vaccinated, May 3, 1881. This was repeated on the 17th of the same month. In the meantime the fifty sheep were kept together in the same flock, under the same conditions and influences. May 31st the whole fifty were inoculated with strong virus, and the sheep again turned loose together. Pasteur's predictions, as to the result, were fully verified the following day; twenty-three unvaccinated sheep being dead at 2 o'clock, and the two others during the afternoon, while the twenty-five vaccinated animals remained in perfect health, save that one purposely receiving an extra dose of the strong virus was sick for a few hours, then recovered.

Such satisfactory experiments having been often made, thousands upon thousands of domesticated animals have been vaccinated during the spring and summer of 1882 with material furnished by the renowned investigator, and again the financial interests of France owes her illustrous son and science a splendid recompense of reward.

Nor is the end reached here. The successful study of this disease and the production of a safe vaccination virus will no doubt lead to similar results for other diseases, and not improbably will furnish a scientific basis for that already practiced upon human beings as a preventive of smallpox. The fact is, a study of the disease of fowls, commonly called cholera, helped in working out that of splenic fever, and especially led the way to the preparation of the vaccination material as now used. This disease of the domestic fowl occurring on both sides of the ocean is really of like nature, but want of space precludes further notice of it. Suffice it to say, that it is readily transmissible, either through external punctures or wounds, or by taking the parasite with the food. This fact alone should soon lead to measures for its extermination. In our own country, among other studies of this kind, much has been learned about yellow fever, undoubtedly due to a specific organism not yet satisfactorily determined; about diphtheria, in which the minute but dangerous enemy has been well recognized and carefully studied, about several forms of septiæmia or blood poisoning, and especially about a prevailing disease of swine ordinarily known as "hog cholera." Though "a prophet is not without honor save in his own country," let us hastily review the facts ascertained by Drs. Detmers and Law in regard to this last named malady.

Hogs were entirely exempt in the United States from the disease until within quite recent times, and, though the original infection and the spreading from the first locality was not observed, many facts are known concerning its introduction in given areas and its subsequent mischief where swine kept under the same conditions were robust and healthy before. Numerous speculations were made and theories advanced to account for the plague. By some it was attributed to the diet (too exclusively corn); by others, to filth and unhygienic surroundings, and by others again to degeneration from improper breeding, etc.

The gentlemen named above, with others, were appointed by the Commissioner of Agriculture to investigate the disease, and provided with the requisite means and apparatus. Working separately, they satisfactorily proved the infectious character of the devastating malady. A fraction of a drop of the fluids from a diseased animal, placed beneath the skin of one in health by an inoculating needle, produced in a few days the characteristic affection, as did the diseased parts given in the food. They found by hundreds of postmortem examinations the lesions produced, and the course and progress of the injuries. They also found constantly present a specific organism, and thoroughly studied its morphological and physiological characteristics. They cultivated it outside the living body in harmless fluids and by further inoculations and examinations proved its direct agency in the production of the observed results. They showed how this organism was liable to be transported by infested animals, sometimes other than hogs, by water currents, and, under certain limitations, through the air; they found under what circumstances it was naturally destroyed, and how preserved, and they succeeded in showing what preventive measures could be used through general management, medicinal treatment and vaccination. It was my good fortune to witness many of these experiments, and can personally vouch for the most of the above results, making, for myself, conviction irresistible that the immediate cause of the disease was none other than the living organism always found in the blood and excretions of the diseased animals.

Whether through the information thus derived or from other causes, the loss from this dreaded scourge has been conspicuously less during the last few years. Certain it is, men are on the alert to prevent, through intelligent endeavors, the infection of herds, even though they do not in words admit the truthfulness of the "germ theory.'

The investigations of the author on "blight" of the pear tree and other plants—the only facts yet made public of injuries to living vegetation by *Bacteria*—have a scientific interest in consequence of the readiness with which studies may be made. It is not possible to cut pieces from the flesh of live animals and examine them under the microscope in their living state, but this can be done with plants. In the latter there are no sympathetic inflammatory processes, by which a healthy part suffers in consequence of injury to some other part of the body, neither are there facilities for the distribution of microscopic parasites through the structure as there is in the blood currents of animals. We often say the sap 'circulates," but no such thing really takes place. All the movements of fluids in plants are processes of imbibition, or soaking through the cell-walls, never in streams in tubular vessels. Hence disease infection is local, and the effects are comparatively very easy to make out.

In animals it is hard to determine whether the injury comes from the destructive action of *Bacteria*, or from their mechanical obstructions, or the poisons they give rise to, etc. In the pear tree such queries are quickly answered, and one soon sees that death comes from the fermentation of the cell contents. It is highly probable that much can in this way be learned to help in the study of similar maladies of man and the domestic animals

The studies on blight have also a practical interest in the well proved fact that the progress of the disease is slow, instead of the rapidly spreading plague formerly thought. Careful examination, once or twice a month, will usually suffice for the efficient excision of all infected parts, and this, if properly done, is perfect protection to the tree. The wounds must be quickly covered with paint or other dressing.

The attested fact that the poisonous principle of certain plants, as of poison ivy or oak (Rhus), is a living organism (Proceedings American Association for the Advancement of Science, 1882) instead of a volatile chemical compound as heretofore supposed, is also a fruitful beginning in the study of the *origin* of infectious diseases.

Of a similar nature is the ascertained fact that a micro-organism found in the saliva of healthy human beings, causes death when inoculated into a healthy rabbit, (Sternberg, National Board of Health, 1880.)

Such facts offer no contradiction to the disease-producing agency of the observed living organisms, but only show that they may be harmless to one host and deadly to another, at least when first introduced. Many facts go to show that the physiological system may become inured to these poisons as well as to those of a chemical nature. As a man becomes habituated to the use of deadly doses of opium and arsenic, so in like manner he may resist after a time the pernicious effects of *Bacteria*, though the latter continue to live and multiply in certain parts of his body. This probably explains the peculiar characteristics and effects of "Texas cattle fever."

What inscrutable mystery has been connected with that terrible scourge to human beings, leprosy! How it baffled the skill of the physician, and doomed the unfortunate to helpless and hopeless misery, making them loathsome though pitiable objects; life a wearisome burden to themselves, and their very being a menace to their friends! But the puzzle is solved. Through the microscope the cause is a visible, self-perpetuating, parasitic plant, growing, propating, destroying, yet subject to the same general surrounding conditions as other life-possessing things. Its terror is half gone, from being known, and scientific medical treatment will banish the other half. Though by no means a disease of the ancient times alone, its uninterrupted career need no longer darken the lives of innocent sufferers, superstitiously supposed to be under the curse of God's anger.

Without attempting to give a *résumé* of what is known of the disease-producing effects of *Bacteria*, but only illustrations of this knowledge, mention is here made of but one more case—the most dreaded and destructive of all the ills of the human body—consumption (tuberculosis). Since 1865 this has been positively known to be transmissible from the diseased to the healthy, though not formerly so recognized. Up to the present year able investigators have sought in vain for the parasitic organism which all analogical facts strongly indicated must be the cause of the terrible disease. But skill and patient research have at last triumphed. By certain processes of staining, the first of which rewarded the labors of Dr. Robert Koch, of Berlin, the destroyer has been detected, and has now been seen by hundreds of expectant eyes. It inhabits diseased parts of the body, which may be in almost any organ as well as the lungs; it lives, and grows, and reproduces slowly, for its kind, but surely working its dreadful results. The disease is common to human beings and the domesticated animals, and is transmissible from one to another in any order. With such knowledge, and the possibility now of definite and sure-grounded study, the misery and suffering heretofore so calamitously common, must soon be beneficently controlled, and the world made brighter and happier to unnumbered thousands of its inhabitants. We cannot anticipate the results in regard to cure, but may comprehend means of prevention. There need be no more discussion about hereditary taint, except as indirect conditions.

3. BENEFITS.

The foregoing might lead one to the conclusion that *Bacteria* were injurious and only injurious in their effects; but a little thought will soon convince us that this is far from the truth. They are primarily the agents of decay, ·yet in this very sense untold good comes from their activities. It is indeed no more startling than true to say that, as at present constituted, the organic world is a indebted to them for its existence; without them man could not live upon the earth. The processes of nature run in a circle, the possibility and perfection of which depend upon the proper filling of every part. Green plants, the architects of the world, build solid structures out of gaseous and liquid materials, but must have these materials furnished. They create nothing. The supply being limited, this would soon be exhausted were there not some provision to prevent it. We have seen that organic materials, though dead, have no inherent tendency to decompose; kept free from the working of living things they endure forever, except when consumed by fire. How different the world would be without putrefaction and decomposition! Eliminate these processes now, and we should see the fallen trunks of trees accumulating in the forests as obstructions, instead of helping to form a rich vegetable mould for future growths and generations of forests; the mummied bodies of animals would remain for all time, like the grotesque cadavers of the old Egyptians, teaching history, but the sad one, of the reign of death. It is well known that fertile soils have as an indispensable part of their composition a certain amount of partially decomposed vegetable matter; this is, in truth. the special characteristic of the surface soil as distinguished from the subsoil. Our field and garden plants are dependent on this rich upper stratum, and our valuable animals and ourselves are dependent on the plants. Hence, following the circle round, we reach the knowledge of our indebtedness to the *Bacteria* as agents of decomposition.

There is another way in which the fertility of the soil has recently been shown to depend on *Bacteria.* Green leaved plants require nitrogen as an essential part of their food, and they are only able to make use of this when in the shape of nitrates, or as combined with earthy or mineral substances. It has long been known that saltpetre (nitrate of potash) collects in caves. In times of need, it has been artificially obtained by washing earth in which there existed considerable amounts of organic matter undergoing decomposition, and to the surprise of the workmen such soil, after certain intervals of time, may be washed and rewashed without apparent exhaustion. So it came to be understood in time that in suitable caves the compound actually formed where it was found, not simply collected there through the percolation of water, etc. Upon heating a portion of such nitro-collecting earth, or treating it with chloroform, this peculiar power was observed to be lost; and by further investigation it was demonstrated that a microscopic living organism is the real agent in the work. Thinking, no doubt, in part of this, a well known scientist has announced as the topic of a paper "The soil a factor, not a mine."

We more directly make use of *Bacteria* in many ways. The fermentation in which alcohol is the chief product is commonly due to the yeast plants, closely allied to the *Bacteria*; but the latter are rarely absent from brewers' yeast used in bread making. The so-called "salt-rising" is wholly dependent on the work of *Bacteria;* they make for us vinegar and saur-kraut, for the chemist litmus, they "rot" flax, they "bleach" linen and cotton spread out on the dewey grass, they clean bones macerated in water by the anatomist, they purify the waters of rivers, cisterns and tanks, causing it in close reservoirs to "work," after which it is sweet and bright. It is said *Bacteria* play an important part in the manufacture of cheese, and in the production of certain perfumes and flavoring extracts. They are found in germinating seeds, and in the digestive organs of all animals; but whether of real necessity in these, can not now be confidently stated. It is even probable that the wonder-working little busy bodies are used in medicine under cover, to the physician himself as well as his patient, of some other name and idea. It is pretty certain that epidemics among noxious insects sometimes occur through the agency of *Bacteria.* When we know them better we may be certain of gaining further help from the willing servants.

PART III.—CLASSIFICATION OF BACTERIA.

No one pretends to have made out a complete and natural classification of the *Schizophytes* or *Bacteria.* Many have embodied in systematic form their ideas of kinds and relationship based on form, development, motion, physiological effects, etc.; but until further knowledge is obtained, all such classifications are preliminary and more or less artificial. That, however, which proves of most use, and which seems more nearly natural than any other, is founded on the shape of the cells and mode of union. It has been best worked out by Ferdinand Cohn, as follows:

I.—Spherobacteria,
    One genus, MICROCOCCUS.
II.—Microbacteria,
    One genus, BACTERIUM.
III.—Desmobacteria,
    Four genera, BACILLUS.
        LEPTOTHRIX,
        BEGGIOTIA,
        CRENOTHRIX,
    (The last three genera are placed here for comparison, though they belong to the Oscillatoria Algæ.)
IV.—Spirobacteria,
    Three genera, VIBRIO,
        SPIRILLUM,
        SPIROCHÆTE.

Dr. Luerssen has put this in the following form, in which the genera are conveniently characterized. Crenothrix is omitted; this is described as having long filaments with distinct articulations. The cells of Micrococcus are often linked together in a bead-like string.

I. Cells not in filament, separating immediately after division, or in couples, free or united into colonies (Zooglæa) by a gelatinous substance.
A. Cells dividing in one direction only.
  a. Cells globular.. Micrococcus
  b. Cells elliptical or shortly cylindrical .... Bacterium
B. Cells dividing regularly in three directions, thus forming cubical families having the form of pockets strung crosswise, and consisting of 4, 8, 16, or more cells.. Sarcina

II. Cells united into cylindrical filaments.
A. Filaments straight, imperfectly segmented.
  a. Filaments very fine and short, forming rods..................................Bacillus
  b. Filaments very fine and very long .... Leptothrix
  c. Filaments thick and long ....Beggiotia
B. Filaments wavy or spiral.
A. Filaments short and stiff.
  a. Filaments slightly wavy, often forming woolly flocks ....Vibrio
  b. Filaments spiral, stiff, moving only forward or backward ....Spirillum
B. Filaments long, flexible, with rapid undulations, spiral through their whole length and endowed with great mobility ....Spirochæte

Rather closely following Cohn we add some account of the *genera*.

The genus *Micrococcus* is defined as follows: Cells colorless or nearly so, globular or oval, single or united in twos or forming filaments of many articles, or grouped in gelatinous masses, without movement, very small, often less than one twenty-five thousandth of an inch.

The species are very numerous, some of which are supposed to be the younger forms, or spores, of other *genera*. In masses some are decidedly colored, red, yellow, green, etc., and when examined as usual in fluid, they quiver and oscillate; but rarely swim in a straight or wavy line. They often collect in masses (*Zooglæa*) and sometimes form a thin veil on the surfaces of liquids. They cause various fermentations, but not putrefactions. Certain species are believed to be "disease germs," in such as the following maladies: Variola scarletina, diphtheria, septicæmia, syphilis, typhus, *pébrine*, swine plague.

The genus *Bacterium* is described thus: Cells elliptical or short cylindrical, single or united in twos rarely in fours, never in extended chains, but sometimes collected in masses, (*Zooglæa*), very active especially in nutritious fluid in the presence of oxygen.

The *Zooglæa* are different from those of *Micrococcus*. The intercellular adhesive substance is more abundant, leaving the organisms less compact, more readily separated in water. The motions are of every kind, rolling, spinning, turning end over end, swaying as if attached at one end, and progressing endwise, often rapidly. There are numerous species, producing putrefactions and fermentations of various kinds, and diseases of plants; but rarely of animal disease. *Bacterium termo* is the most widely distributed and commonly occurring of living things, in all infusions of vegetable and animal matters. Another species is common enough in "blight" of pear, apple, and many other plants.

The genus *Bacillus* comprises such as have very slender, straight, rod-shaped shells, several times as long as wide, rigid or flexible, single or joined end to end, active or not, reproduced by transverse division, and at least in some species by spores.

This genus includes several species, some very common in infusions, others only met with in specific diseases of animals. The latter are usually motionless, the others glide forward and backward like the switching back and forth of a train of cars, bending (when of several links) more or less at the joints. *Bacillus anthracis* causes "anthrax," "splenic fever," or "charbon" of animals, and is the organism so successfully studied by Koch, Pasteur, and others. Other species are the recently discovered organisms of tuberculosis (consumption) and leprosy. Another is supposed to be the active agent in malaria.

The genus *Leptothrix* contains those in which the very slender cells are closely connected end to end in long even filaments.

Several species have been described, mostly found in stagnant water. *Leptothrix buccalis* occurs almost constantly in the human mouth and intestinal tube. It is believed by some to be the cause of the decay of the teeth.

The genus *Beggiotia* includes species whose very slender cells are closely connected into filaments imbedded in mucous matter, and containing shining granules of crystalline sulphur.

There are but few species inhabiting especially warm sulphurous waters in which they disengage the strongly scented gas, sulphuretted hydrogen, so characteristic of these warm or hot springs.

The genus *Vibrio*, defined by Cohn (not as used by Pasteur) is as follows: Body filiform, more or less distinctly articulated, always bent, movement serpentiform.

The special characteristic in this is that the thread-like cell is never straight; there may be a single curve in the middle, or two, three, or four regular but long or open spiral turns. In the latter case it is not easy to separate the species from those of *Spirillum;* but these have short spirals. In their forward movement they also turn upon their long axis, thus giving the appearance of a snake-like progression. The movements are quite rapid. There are but few species, though some of them are common in putrefying infusions *Vibrio rugula* is frequently found in the human mouth, especially on unclean teeth.

The genus *Spirochæte* embraces species having long slender flexible filaments many times spirally and closely turned, and frequently bent back upon themselves.

Species few, in infusions, stagnant water, etc. *Spirochæte obermeiri* is found in the blood of persons suffering with recurrent or intermittent fever.

The genus *Spirillum* is characterized by rather short, thick filaments turned in rigid spirals.

The species are not easily distinguished from some of those of *Vibrio*, but are always in rigid spirals of 1½ to 5, or rarely more turns. Their motions are usually very rapid, cork-screw fashion. They are found for the most part in fetid infusions of animal and vegetable substances. Species few. *Spirillum volutans* is a giant among the *Bacteria*, many times larger than any other species known.

The genus *Sarcina* is characterized as follows: Cells globular, dividing by partitions in two or three planes at right angles to each other; cell wall silicious.

In consequence of their manner of division, which is different from all other *Bacteria*, the cells are often found in rectangular groups of four, sixteen, etc. The silicious substance of the cell wall is not found in any other *Bacteria*; in this *Sarcina* approaches the *Diatoms*. The species are few. *Sarcina ventrich* not unfrequently occurs in the stomach and intestines of man, but does not seem to be characteristic of any special disease.

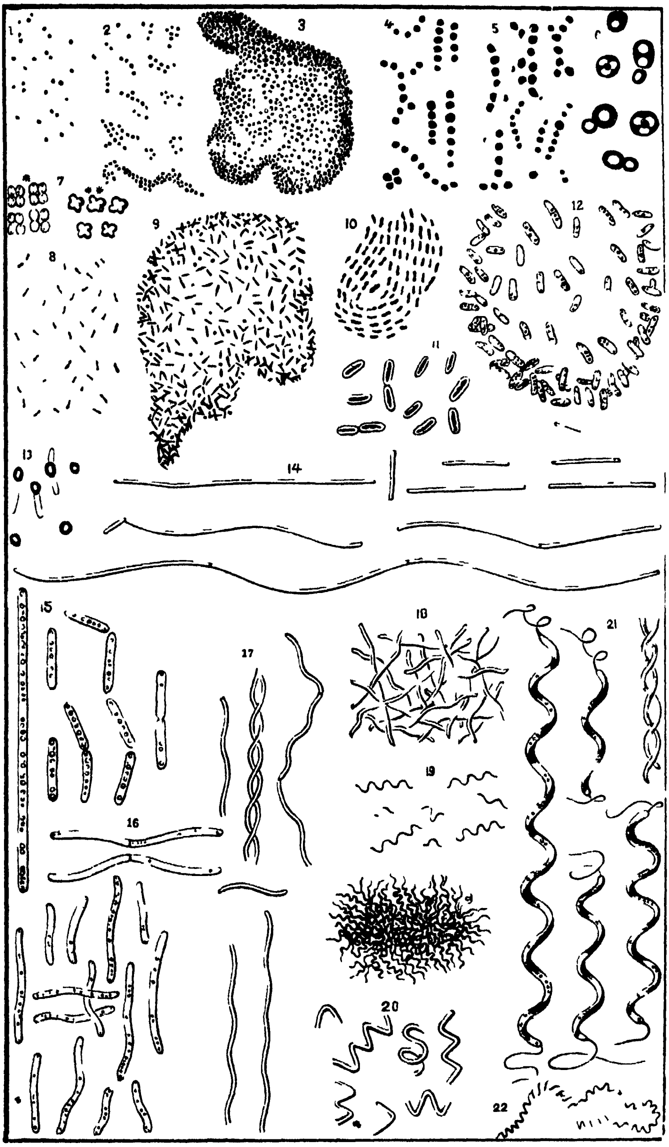


PLATE I.

FROM "MICROSCOPICAL JOURNAL:"

Fig. 1.—Micrococcus prodigiosus (Monas prodigiosa, Ehr.) Spherical bacteria of the red pigment, aggregated in pairs and in fours, the other pigment bacteria are not distinguishable with the microscope from this one.

Fig. 2.—Micrococcus vaccinæ. Spherical bacteria, from pock-lymph in a state of growth aggregated in short four to eight-jointed straight or bent chains, and forming also irregular cell-masses.

Fig. 3.—Zooglæa-form of micrococcus, pellicles or mucous strata characterized by granule-like closely set spherules.

Fig. 4.—Rosary chain (Torula form) of Micrococcus ureæ, from the urine.

Fig. 5.—Rosary chain and yeast-like cell-masses from the white deposit of a solution of sugar of milk which had become sour.

Fig. 6.—Saccharomyces glutinis (Cryptococcus glutinis, Fersen), a pullulating yeast which forms beautiful rose-colored patches on cooked potatoes.

Fig. 7.—Sarcina spec. * from the blood of a healthy man, * * from the surface of a hen's egg grown over with Micrococcus luteus, forming yellow patches.

Fig. 8.—Bacterium termo, free motile form.

Fig. 9.—Zoogl̈æa—form of Bacterium termo.

Fig. 10.—Bacterium pellicle, formed by rod-shaped bacteria arranged one against the other in a linear fashion, from the surface of sour beer.

Fig. 11.—Bacterium lineola, free motile form.

Fig. 12.—Zooglæa-form of B. lineola.

Fig. 13.—Motile filamentous Bacteria, with a spherical, or elliptical highly refringent "head," perhaps developed from gonidia.

Fig. 14.—Bacillus subtilis, short cylinders and longer, very flexible motile filaments, some of which are in process of division.

Fig. 15.—Bacillus ulna, single segments and longer threads, some breaking up into segments.

Fig. 16.—Vibrio rugula, single or in process of division.

Fig. 17.—Vibrio serpens, longer or shorter threads, some dividing into bits, at * two threads entwined.

Fig. 18.—"Swarm" of V. serpens, the threads felted.

Fig. 19.—Spirillum tenue, single and felted into "swarms."

Fig. 20.—Spirillum undula.

Fig. 21.—Spirillum volutans, * two spirals twisted around one another.

Fig. 22.—Spirochæte plicatilis.

All the figures were drawn by Dr. Ferdinand Cohn with the immersion lens No. IX, of Hartnack Ocular III, representing a magnifying power of 650 diameters.

SOME HORSE TALK.

By N. H. PAAREN, M D., Chicago, Advisory Veterinarian, Department of Agriculture, Illinois.

Every practical farmer knows that no good crop can be expected from poor or inferior seed, nor even from the best of seed, if the same be sown in improperly prepared or mismanaged soil. But the old adage "For as ye sow so shall ye reap," holds good in all transactions of the farmer, whether they relate to the management and tilling of the soil, or to the management and keeping of the live stock in his possession. In the following lines we will consider some of the consequences of bad management of an important factor in the working power of the farm, namely, the horse. This is an important subject for the farmer's consideration, for he frequently regards many of the losses he sustains in this respect as the consequence of natural causes over which there is no control, and which no knowledge can avert. We hope to be able to convince persons entertaining such fated opinions, that a large number of horses annually perish from a neglect of the conditions required for their preservation in health and freedom from disease. With respect to food, we shall prove that many dangerous diseases arise from improper regulations of diet,—as to quantity and quality, and the times at which it should be given,—the rules for which are simple and easy enough, but are continually transgressed through carelessness or absurd prejudices. Also, that excess of labor forms a prolific source of disease in both young and old horses, and the vigorous health of young ones in particular is often wasted and destroyed from premature work, which, if economically managed for a year or two at most, might have preserved them in health and activity nearly to the full term of the allotted periods of their lives, instead of being dissipated in the first six or seven years of their existence. And, lastly, that insufficient shelter and exposure to wet and cold are very common causes of disease, the effects of which are certain to manifest themselves in some way or other on horses that have been exposed to their influences, though oftentimes obscurely and at a remote period. Our animal patients, far more than the human patient, are exposed to the influence of physical agents. One-half of the diseases of the horse and of cattle are referable to temperature, many more to the changes effected in the atmospheric air by respiration, perspiration and the various excretions, and the greater part of the residue may be traced to some unknown, and not sufficiently appreciated, atmospheric agency. These are the chief points we will consider,—*food*, *labor* and *temperature*,—agents that are continually acting on the condition and general health of farm horses, either for good or for ill. If properly directed, they produce in them strength and capability of enduring labor; but misdirected, their beneficial influences are changed from ministers of good to insidious and manifest sources of disease.

INSUFFICIENT OR IMPROPER FOOD.

The purpose of food being the supply of materials which, when prepared by the process of digestion, shall repair the waste of the body and maintain its growth and temperature, it must be evident, if this process is interfered with by the supply of articles of food such as will neither suit the powers of digestion nor the wants of the system, that disturbances of some kind are likely to occur in any or all of the steps of the nutritive process, from the reception of the food into the stomach to its appropriation and assimilation to the living textures. Accordingly, we will direct our attention first to the diseases of the stomach. which are easily traced to errors in diet and interference with the digestive economy.

Diseases of the Stomach.—The stomach of the horse is comparatively small, holding about three gallons, whilst the ox possesses four stomachs, the first of which is larger than that of the horse. This affords us a very important lesson at the commencement, that whilst the ox is so constructed as to consume large quantities of food at a meal, the horse, on the contrary, requires a more moderate quantity of a more nutritive nature, and to be fed oftener. To insure perfect digestion of the food, it requires to be first masticated with the teeth, and moistened with the salivary secretion in the mouth, which flows during this process in considerable quantities. In the stomach, the food is further acted on in healthy digestion by the gastric juice, when it is converted into a soft, pulpy mass called *chyme*, which passes as fast as it is formed into the intestinal canal. This part of the digestive process is very active in the horse; but it is sometimes interfered with, in consequence of devouring his food in too rapid a manner, without being either properly masticated, or mixed with the salivary secretion. This circumstance occasionally happens when the animal has been fatigued with hard work, and restricted from food for an improper length of time. In these cases *indigestion* takes place, which is a very serious affair, for the life of the animal is in considerable danger. *Fermentation* of the food and disengagement of the gases quickly ensue, and as the horse can neither belch up the air, nor vomit up the food, distention of the coats of the stomach takes place, occasioning violent, agonizing pains, spasms, and all the symptoms recognized in aggravated cases of colic, for which it is frequently mistaken. This alarming disease is recognized by veterinary surgeons as *acute indigestion*. It should be understood that digestion, although always in part chemical, is controlled by a superior, superintending influence—the vital power; and no sooner does this power fail, or the chemical agencies or decompositions become too strong for it, than we have fermentation of the food, and precisely the same changes in the stomach as would occur out of it, when kept in a moist state at similar temperature. The fermentable nature of the food, and the peculiar construction of the horse's stomach, which prevents vomition, and his occasional detention from food and water during the long hours of labor, are circumstances which account for the great liability of farm horses to this disease. The stomach of the horse is liable to another dangerous disease, arising from a false and injurious system of dieting, namely:

The Staggers.—This disorder is slow in its progress, and seldom observed until firmly established. The symptoms are easily recognized by the drooping head, impaired vision, staggering gait, and sometimes violent and dangerous struggling of the afflicted animal. It is more frequently observed in farm stables during the busy tillage season than at any other time, in consequence of long continued labor, and little rest or food, except at night, when they are allowed to gorge their stomach to repletion. Should the horses on a farm be attacked occasionally with slight fits of this kind, the farmer may rest assured that there is mismanagement somewhere in the feeding department.

Diseases of the Intestinal Canal.—The changes which take place in the gastric process of digestion have been noticed, but others are carried on in the intestines, where the chymous mass, becoming mixed with the hepathic and pancreatic secretions, is converted into *chyle*, which is passed onwards by the muscular creeping action of the small intestines into the larger ones, and during this passage it is acted on by the agency of a set of vessels termed *Lacteals*, whose orifices are abundantly spread over their villous surfaces, for the purpose of absorbing the nutritious parts. The same absorption takes place in the large intestines, only the chylous mass is retained in the *colon* for a longer period, by which its nutritious parts are finally separated and absorbed, and the excrementitious portions are afterwards expelled per rectum. Now, in this process, we observe that the united pancreatic and biliary fluids poured on the chyme penetrate it, render it fluid, animalize it, separate the nutritious from the excrementitions, which former is finally carried into the circulation. It sometimes happens, however, that serious disturbances occur during this process. Horses are frequently fed with imperfect or indigestible articles of food, which, accumulating either in the small or large intestines, prove sources of irritation and disease. It is a very common case to find the *colon*, or big gut, as it is frequently called, packed with indigestible fibrous matters, which, on being evacuated by the use of medicines and injections, prove to be unmasticated and unchymified straw, hay or husks, half-rotted frosted clover, weather-beaten, dusty hay, or hay mouldy and rusty and covered with parasitical growths, musty and sapless cornstalks;

these are articles that frequently occasion visceral or intestinal complaints. Some horses are in the habit of bolting their oats or corn, which passes into the intestines intact. This is also a cause of indigestion and its consequences; hence the feeding of such horses on ground feed is not only an economical practice, but lessens a tendency to intestinal disease. In colic cases of this kind we do not find the rolling, agonizing pain of spasmodic colic, but the animal lies and rises at short intervals, frequently points his muzzle round to the flank, the seat of pain, and when standing, either paws the litter with one of his fore-feet, or strikes at his belly with his hinder ones. The pain, in cases of this kind, arises from the indigested food impacked in the colon, and the symptoms are seldom entirely removed until the greater part becomes evacuated. This disease is never to be regarded as void of danger, as it may unexpectedly terminate in inflammation and gangrene.

Colic is very commonly attributed to horses from drinking cold spring water when in a heated state. That spasmodic constriction of the small intestines is occasionally caused in this way, producing very intense and acute pain, we do not question; but in a general way, the colic pains are caused by the washing of imperfectly digested food from the stomach into the intestinal canal, before it has undergone chymification, rather than to any direct influence of the cold water on the muscular coat of the intestines. We believe that food of the best description, when washed into the intestines in this manner, is certain to cause pain and spasm from the fermentation and disengagement of gases, which invariably takes place on vegetable matter being exposed to heat and moisture, which, if it had been properly acted on by the antiseptic properties of the gastric juice, would have been incapable of being fermented. It should be understood that a horse will drink at one time a much greater quantity than his stomach can contain, supposing it to be entirely empty; but even when he drinks a less quantity, it remains not in the stomach, but passes on to the large intestines, and is retained in the *cæcum*, commonly called the water gut, or blind gut. Hence the danger to be apprehended at all times from allowing horses to drink a quantity of water soon after feeding, or before the food is sufficiently digested in the stomach, from the chance of portions of it being washed into the intestinal canal, when the consequences are, as before stated, fermentation and disengagement of gases, causing pain and spasms, which, when it occurs in the small intestines, produces *spasmodic colic*, or it may occur in the large intestines, causing *flatulent colic*. In the former disease we cannot detect the swelling; but it is evident enough when the colon or big gut is the seat of the disease, by the enlargement of the belly on the off flank. The nostrums generally used by farmers are stimulants of various kinds, such as turpentine, peppermint, whisky, pepper, and ginger. Simple cases of colic can generally be successfully treated on the stimulating principle; and many cases admit of this being carried on to an extreme extent with comparative safety; but in other cases, we have constipation or impaction to deal with, which bids defiance for a time to proper remedies; and then, if strong stimulants have been previously given, inflammation is quickly set up, and the disease terminates in gangrene, which, if otherwise treated at the commencement, might have had a successful result. These intestinal diseases are frequently confounded with that of inflammation of the bowels, and by farmers or novices always treated alike. This error invariably proves fatal to the patient, for the stimulating drenches, which might prove beneficial in one, are certain to cause death in the other.

It is desirable that the farmer should be able to make a distinction between simple colic and inflammation of the bowels, which may generally be done by attending to the symptoms of each. Thus, in cases of colic, there is very little acceleration of pulse, except during the paroxysms of pain. The extremities are also warm, and there are intervals of cessation from pain, which is much abated by a discharge of wind or dung. But in inflammation of the bowels, the pain remains equal and fixed; the pulse is rapid, hard, and thread-like, sometimes almost indistinct; the breathing is considerably accelerated; the extremities are icy cold, and obstinate costiveness prevails from the commencement. Inflammation of the bowels is, fortunately, not a very common disease in farm stables; but when it does occur, it may generally be traced to errors in diet. With respect to intestinal diseases generally, it would appear, from their being more prevalent during the latter part of autumn and commencement of winter, that the state of the atmosphere has some predisposing influence. At this period of the year the atmosphere is frequently moist and relaxing; and under its influence the muscles, and with them the heart and arteries, lose power and tone; the textures also become relaxed, and the perspiration which accumulates in the long close hair of farm horses during work perpetuates the relaxation. In this state, the stomach and intestines also participate in the loss of tone; and hence disease perhaps so often occurs at this season on very slight errors of diet.

There are a few simple rules founded on experience in the management of horses, that may be introduced here with advantage.

1. The earlier the horses are watered and fed in the morning, and the longer the intervals between that time and hitching up, the greater chance is there of the food undergoing perfect digestion. Ordinary farm-work is not likely to interfere with the digestive process; but active exercise or heavy hauling are likely to do so, and should always be avoided soon after a meal.

2. The mid-day meal and full one hour's rest should never be interfered with. The practice of accomplishing a day's work in one hitching-up, by keeping the horses at work for eight or nine hours on a stretch, is highly injurious, being certain to cause remote, if not immediate disease.

3. On the return of the team to the stable in the evening, it is wise at all times to divide the night's allowance of food, giving just as much at first as will remove the sensation of hunger, and in an hour or so afterwards the remainder may be given with impunity.

It has been shown in cases where the digestive organs fail in appropriating nourishment from various improper articles of food, that they become distended, irritated, and otherwise disordered. Sometimes imperfect food is digested, and yet produces disease, from the imperfect blood sent thereby into the circulation. Diabetis or profuse staling, is caused in this manner, from horses eating mow-burnt-hay, heated oats and decaying vegetable matters of various kinds. In this disease, saccharine matters are supposed to be formed in the intestines, which are taken up by the lacteals, passed into the blood, and again eliminated by the kidneys in the urine.

OVERWORK.

The influence of work is clearly observed in the general condition of farm horses, from the breaking-in to the termination of life, and much depends upon the amount of work given during the first two years, whether they shall become healthy, useful animals, or unthrifty and weakly—a burden to themselves and to their owners. On well managed farms, and where humanity and kindly treatment prevails, the working horses live a monotonous kind of life. They are sufficiently fed, and rarely overworked; and, except perhaps during the busy tillage season, or catching hay or harvest time, their employment is easy, and disease seldom produced. It is not uncommon to see horses managed in this manner performing their daily labor at twenty years of age with apparent ease and comfort. The average work of a plow team is about eight hours a day, and the pace rarely exceeds a mile and a half, or two miles an hour. The severity of this labor will depend on the strength of the teams, their age and food, as well as the nature of the soil and cultivation. It is mismanagement to make a pair of three year old horses perform the same amount of labor in the day, as a pair of older horses that are staunch and accustomed to their work. If a pair of six year olds can plow an acre of light land in a day, half an acre or two-thirds of an acre are sufficient for a pair of young horses to do. It is also folly to expect a pair of horses fed in the open fields through the summer to perform their work freely through the autumnal wheat sowing; or a pair that have been wintered out on hay, with only an occasional small allowance of oats or corn, to bustle through the busy spring tillage as they ought. There is no economy in practices which compel horses to perform a greater amount of labor than either their strength can bear, or their rest recruit; and hence the reason why so many are used up long before they reach what may be fairly considered as their allotted term of life. This may be estimated at fifteen years; but a very considerable number die or are destroyed before they reach half of this period.

When a horse is overworked, one of two things generally happens: he will lose flesh and become weak, or his legs will fail and he will become lame. Loss of flesh implies loss of muscular tone and weakness, which renders the body susceptible to various diseases, arising from extra exertion, improper food, exposure to cold and wet without the stables, or foul and heated atmosphere within. And here we have the common predisposing causes to catarrh, bronchitis and distempers in young horses, and to chronic cough, diarrhea, and general or local dropsy in old ones; besides lameness of various kinds, arising from bursal enlargements of the joints, ligamentous thickenings, and bony enlargements, which either restrict the animal's usefulness, or render them irreparably lame and worthless. It is impossible to particularize the cases of mismanagement that occur in which horses are overworked on a farm.

Some of the diseases arising therefrom, particularly cases of lameness, are seldom sudden in their effect, but of slow growth; and, notwithstanding this, it is an almost every-day occurrence to hear men blame some particular event of yesterday which brought to a crisis the folly and mismanagement of months or years. Like the last feather on the camel's back, it bears the blame which belongs to the load that preceded it.

INSUFFICIENT SHELTER.

Our heavy work-horse must be regarded as the product of artificial treatment. His capacious trunk and heavy body have been produced by an abundance of natural and artificial herbage. His digestive organs are large, and their functions powerful; possessing the property of quickly assimilating nourishment. This race generally have an excess of cellular tissue, and a soft temperament, with a tendency to fatten, and are incapable of enduring fatigue and privation like the smaller and more active breeds. Horses of a more active description are employed by the farmer; yet they all, more or less, possess the characteristic temperament of the heavier races; and to be reared in perfection they must be supplied with an abundance of food, besides proper shelter and warmth, on which the body depends for its early development as food itself. The want of fulfilling these conditions is certain to incur loss from disease in almost every stage of their existence.

To Commence with Rearing.—Cases of mismanagement are frequent everywhere. It is no uncommon case to see young colts indiscriminately mixed with brood mares, horned cattle, and sometimes swine in the barn yards. Many of these places have little or no shelter or protection from the weather, and a want of anything like drainage is more common than otherwise. In fact, they are places far better adapted to the manufacturing of manure than the winter lodging of colts. The food, too, that is sometimes supplied to them in these places is of a very inferior character, being often the refuse of hay, &c., of the working horses or the cattle. We have witnessed this picture many a time, and it is a wonder that more diseases and accidents do not occur than really do.

The functions most active in colts are those which administer to growth, such as the organs of digestion and assimilation; and hence derangement of the digestive organs is common to colts reared in this manner—seen in the numerous cases of leanness, hidebound, general dropsy, diarrhoæa, worms, lice, etc.; and in this spiritless state catarrh and other disorders of the respiratory organs are commonly produced, from the influence of cold and wet and insufficient food. When you see colts that have undergone two or three winters of this short-sighted system of management, having their skins rigid—sticking, as it were, to their ribs—the hair dull and dead-like, and the summer's keep failing to recover them, you may form a shrewd guess at what kind of horses they will make. Farmers who mismanage their young horses in the manner described, do so from a mistaken motive of economy. They imagine that the summer's keep will compensate for the partial starvation of winter. But the growing animal requires food not only to sustain itself, but to maintain its growth. The organic materials of a living body are constantly changing, portions of it becoming effete and taken away, whilst new parts are endowed with the property of life, and are built up in their places. The living principle is permanent, whilst the material changes and the reparatory process cannot be maintained in its integrity unless the body be supplied with food adequate to its peculiar wants. This should contain a large supply of the phosphates, from which bone is formed, and of gluten or fibrine, by which the muscles are enlarged. These materials are obtained from oats and bran, natural and artificial grasses, and roots of various kinds. In the absence of materials of this kind, the bones do not increase in size, and the muscles are not sufficiently developed, and hence the common origin of so many ill-shaped, long-legged, light-carcassed horses, that are almost always sold at inferior prices, and frequently to persons who do not scruple to use them quickly up in work beyond their age and strength. The immediate operation of wet and cold arising from insufficient shelter is no less injurious to

Older horses. The sudden transitions experienced between the existing state of labor by day. and when kept on grass during nights, often subjected to cold and wet, weakens the circulation of the surfaces of the body, and the blood accumulating more in the internal parts, produces congestion, and hence, inflammation of the mucous membranes of the air passages, causing catarrhal complaints, such as coughs, sore throat, bronchitis, besides their common consequences, as chronic cough, thick wind, and sometimes broken wind. The indirect operation of cold and moisture deserve a passing notice. Suppose a horse-team after a long journey or tiresome work, instead of being taken direct to the stable or under shelter, is left standing for some considerable time, exposed the while to severe cold or wet, whilst the owner or driver is sheltering and regaling himself with beer and draw-poker in the corner grocery. This is no very uncommon case. Internal congestions may occur from the chill suddenly arresting the prespiration and throwing the blood inwardly, oppressing some of the internal organs. But the chances are, the horses will escape this danger, from the healthy reaction which follows the effect of cold, provided their vital energies have not been much exhausted by excessive labor and want of food. And yet, on their arrival home to what may seem to be most comfortable quarters, they meet there with a greater enemy than either cold, or wet, or hunger—*the heated stable*; and the reaction which follows the exposure of the body in these instances, frequently produces inflammation and the common result.

Farm stables are not only frequently heated to excess, in consequence of the number of their inmates, but they are foul and vitiated from gases or vapors of a positively noxious quality, engendered from the decomposition of the litter, dung, and urine, together with animal exhalation. The deleterious operations of effluvia, arising under these circumstances, may be short of a directly poisonous effect, yet it gradually undermines the health, and can only be counteracted by a more efficient means of ventilation and general cleanliness. The distinction should be drawn between a hot stable and a foul one, as the former is capable of producing one series of effects, and a foul one another. In the foul stable we have heat and impurity, arising from the same source, and operating in combination, producing not only a tendency to inflammatory diseases, but others of a more serious character. It commonly happens that a variety of agents and circumstances may be required to act in combination to produce some diseases. Thus horses that are badly fed and overworked by day, are very likely to be exposed to heated, vitiated stables at night, and these are the common victims of such diseases as farcy, glanders, periodic ophthalmia (so-called moon-blindness), etc. Farm stables with ceilings should have these not less than ten to twelve feet high. They should be well lighted, properly ventilated, and be kept dry both from above and below, with the means of perfect cleanliness at all times. The average temperature should never exceed 62 degrees, being 36 degrees below blood heat. The advantage of keeping the atmosphere of stables considerably cooler than the body itself, consists not only in the greater amount of oxygen contained in a given bulk of air, but also in the greater force with which the foul air of respiration is carried away from the breathing passages, and a pure air supplied in consequence of the difference of temperature maintaining a current. If for any reason more warmth is required, it should be supplied by warm clothing.

REPORT

OF THE

COMMITTEE ON CROP STATISTICS.

To the State Board of Agriculture:

In order that the Board may be advised as to the results of the meeting of the Inter-State Association of Agricultural Boards, held in Chicago November 9 and 10, 1881, having for its object the maturing and enlarging upon the system of collecting and publishing crop and stock statistics in the several States, the following resolutions, adopted at that meeting, are presented:

States were represented at the meeting by duly appointed delegates from Illinois, Indiana, Ohio, Kansas, Nebraska, Iowa, Michigan, Wisconsin, Minnesota, and the National Department of Agriculture:

Resolved, That the prompt consolidation and publication of the monthly reports from different States can be best accomplished through the National Department of Agriculture, and we recommend that all important final footings in each State be telegraphed to the Commissioner at Washington not later than the 8th day of each month of the growing and harvesting season.

Resolved, That an executive committee of nine be appointed to attend the National Convention called by Dr Loring, United States Commissioner of Agriculture, and to be held in Washington the second week in January, 1882, and that said committee be authorized in consultation with Commissioner Loring to arrange all details necessary to harmonize the work of the State and National departments, and render it more efficient, and especially to prepare blanks to be used in common by all States in the monthly statistical work.

Resolved, That in order to determine the fair market value of the annual grain and meat products of the United States it is necessary to obtain information as prompt and as reliable as possible month by month as to the condition and prospects of the foreign grain and meat product, and consequent probable demand for our surplus, and that therefore we urge our most able United States Commissioner of Agriculture to obtain such information through our consular and other foreign service (through courtesy of the Department of State), and publish it promptly through the associated press, and send it by telegraph to the Secretaries of all State Boards that furnish like information from their own States to the United States Department.

Resolved, That we urge each State to use every effort to perfect its own system of monthly reports, making it so prompt, thorough and accurate that the United States department shall not be compelled to go over the ground with a separate corps of correspondents, but, being relieved of this drudgery of detail, shall have the more time and force for other important work in the interest of agriculture.

Resolved, That we are gratified to notice the call referred to above as made by Commissioner Loring to a National Convention in the interests of agriculture, and urge upon all who are officially in charge of the agricultural interests of the different States to respond to that call, and make that convention beneficent in its results.

There has never been a period when the agricultural statistics of the State have been in so great demand as during the past year.

The return by assessors of the area of the growing crops of the present year, materially aided the office in the early publication of the extent of the several crops as determined by the official returns.

The advantages resulting from the showing by townships of the agricultural statistics returned to this office each year, as well as the convenience to County Clerks in having the forms so arranged, prompts your committee to recommend that the blanks be so prepared hereafter.

These blanks now call for the loss, by disease, of horses and hogs, and as it is desirable to obtain the extent and value of loss by disease of all kinds of farm animals, it is recommended that such information concerning cattle and sheep be called for on the future blanks to be prepared for the collection of agricultural statistics.

It is further recommended that the number of stands of bees, and the quantity of honey produced each year, be included in the questions to be enumerated on the assessors' blanks.

In addition to enumerating on the blank the number of horses, mules, and asses, cattle, swine, and sheep, would recommend that the questions calling for the number of cattle, sheep, and swine, be specified as follows: Number over three months of age, number under three months of age.

Young stock in many instances is not enumerated by assessors, and this omission makes corresponding discrepancy between the number assessed and the number marketed, or died of disease each year.

Respectfully submitted,

James R. Scott,
D. B. Gillham,
S. D. Fisher.

Secretary's Report.

To the State Board of Agriculture:

In compliance with the by-law of the Board making it the duty of your Secretary to submit an "annual report of the workings of his office," I have the honor to make the following statement:

WORK OF THE OFFICE.

The work designated by the Board has been as thoroughly performed as the limited help and the constant and heavy pressure upon the office force would permit.

The correspondence exceeds that of any previous year, being nearly thirty-two hundred (3196) letters, as is shown by the letter book, mailed during the past year.

The number of circular letters and printed mail matter of various kinds forwarded in 1881, and not included in the number of letters, largely exceeds that of any former year.

The inquiry for the Agricultural Statistics and other reports published by the Board increases each succeeding year, and the dealers and producers in this and other States, as well as many foreign capitalists and parties seeking residence or investment, are among the regular applicants.

The enlargement of the work of the department is not confined to the statistical work alone; but the steady growth of the State Fair, the Fat Stock Show, and the miscellaneous work of the department demands more attention each succeeding year.

Much more satisfactory service could be rendered with a sufficient clerical force. The necessary time for deliberation and maturing of plans, so essential to ensure even satisfactory results, cannot be given the work so long as the large accumulation of work is so pressing.

ILLINOIS AGRICULTURE.

The advancement in improved agriculture in Illinois has never been more apparent than during the past year, and while the season has been unfavorable for the usual bountiful harvests that have so continuously rewarded the efforts of the producer, there will be a large surplus of meat and grain for export, in addition to the usual large amount of grain of former years retained in the producer's hands.

The accumulated earnings of the farmers of this State have provided the means for the purchase the past year of an unusually large quantity of tile for more thorough drainage, the construction of an unprecedented number of farm buildings and improvements in keeping with the better culture and requirements of our progressive farmers, while the breeders of improved stock have found it difficult to supply the demand, even at better prices than has been obtained for years.

LIVE STOCK.

Illinois is conceded the first place of honor when the number and superior quality of her fine stock is considered.

An examination of the live stock statistics show the general interest taken by Illinois farmers in the breeding and feeding of improved stock.

There is not a county, and but few townships in the State, that have not several intelligent, experienced, and enthusiastic breeders of the several recognized breeds of improved farm animals.

Illinois produces blue grass and other forage plants to perfection, and is not nearly approached in the extent of her annual crops of corn, wheat, rye, and oats.

In matter of climate, abundance of cheap grass and grain, unequalled transportation facilities, central location, it is difficult to imagine a section more admirably adapted to the breeding and feeding of stock.

The commendable ambition of her stockmen to supply, at reasonable prices, the home demand as well as a large portion of the demand from other States, with creditable specimens of the several breeds of farm animals, has made Illinois, at this early date in the history of her thousands of breeding establishments, famous as having the largest herds and flocks of the best specimens to be found on either continent.

DRAINAGE.

The handsome returns from the funds heretofore invested in tile drainage has attracted the attention of capitalists, who are largely investing in the low, flat lands in various parts of the State, which, after being tile-drained, produce enormous crops. Thousands of acres of land are thus being added annually to the cultivated area of the State, and this will not only have the effect to add largely to our annual productions, but will insure the best sanitary conditions.

There have been over one hundred million feet of tile laid in this State during the past few years, nearly one-third of which was laid the past year (1881.)

The work of tile drainage has recently been inaugurated in this State, and the immediate results have so greatly exceeded the most sanguine expectations of the farmers of the State that it will be difficult to supply the demand for tile for some years.

County Agricultural Boards, composed of two or more branches, were organized in 1880 and 1881, as follows, as provided by law:

Date Organized,	County.	Branches.
August 3, 1880	Fulton	Canton—Avon
June, 1880.	Livingston.	Pontiac—Fairbury
November, 1880	Lake	Waukegan—Libertyville
August 28, 1880	Ogle	Rochelle—Oregon
July 21, 1880,	Whiteside	Morrison—Sterling,
1881	Ford	Paxton and Gibson City
1881	Vermilion.	Catlin—Danville—Hoopeston

The following Societies since last report have reorganized as County Agricultural Boards, in compliance with the law relating to the Department of Agriculture and County Agricultural Boards:

Date Re-organized.	County.	Office.
March 27, 1880	Hamilton.	McLeansboro
March 5, 1881	St. Clair	Belleville
March 22, 1880	White	Carmi.
August 27, 1880	Woodford	ElPasso

The following new Societies held Fairs in 1881, as noted below:

County.	Post-office.	Date.
Cook	Chicago	September 12-17
Hancock	Warsaw	October 19 21
Jackson	Carbondale	October 11-14
Marion.	Salem.	September 20-23
Saline	ElDorado	September 20-24
Saline.	Harrisburg	October 4-7
Stark	Wyoming	September 6-9
Union.	Anna.	Aug. 29 to Sept. 2

ILLINOIS FAIRS 1881.

The fairs of 1881, in number of entries and amount of premiums offered and paid, do not compare favorably with the preceding seven years, and make but little better showing than the average of the past eleven years.

The fall season of 1881 was not favorable for holding fairs. The severe drouth in the southern portion of the State induced the managers in many counties to abandon the holding of fairs, while the receipts of fairs held late in the season were largely reduced by the excessive and continued rains.

The following table gives the number of entries, premiums offered and paid during the past twelve years by the fairs held in the State, so far as reported:

Year.	No. of Fairs reported.	No. of entries.	Amount Premiums offered.	Amount Premiums paid.
1870	56	39,188	$108,145	$85,154
1871	49	51,373	117,381	92,426
1872	51	51,793	105,396	82,989
1873	70	63,105	151,324	112,360
1874	89	89,763	206,481	145,401
1875	87	98,879	263,476	192,903
1876	93	96,648	230,250	154,043
1877	94	113,925	230,300	168,237
1878	90	108,483	224,907	154,116
1879	93	120,634	241,083	175,900
1880	88	97,893	217,645	147,473
1881	82	90,585	209,802	140,862
Totals	942	1,022,269	$2,306,190	$1,651,864
Average	78	85,189	132,182	137,655

A number of the leading fairs of the State failed to make report, which in part accounts for the decreased number of fairs reported as compared with previous year.

FAT STOCK SHOW.

The receipts of the Fat Stock Show of 1881, with the exception of that of 1879, are the largest, while the reduced expenses, as compared with the preceding two years, leave but a small deficit. The following table gives the receipts and disbursements of the Fat Stock Show since its establishment in 1878:

Place of show.	Receipts.	Expenses.	Premiums	Expenses and Premiums	Balance in Treasury	Deficit.
Chicago, 1878	†$5,075 87	$2,680 87	$2,395 00	$5,075 87	....	$451 81
Chicago, 1879	‡9,332 32	5,110 59	4,221 73	9,332 32	....	1,861 24
Chicago, 1880	°6,496 57	4,045 81	2,450 76	6,496 57	....	578 18
Chicago, 1881	*7,052 75	3,747 78	3,323 00	7,070 78	....	18 03

† Includes $451.81 received State Fair funds
‡ Includes $1,861.24 received State Fair funds.
° Includes $578.18 received State Fair funds.
* Includes $18 03 received State Fair funds.

ENTRIES OF CATTLE.

The following table gives the per cent. of entries of the various breeds of cattle at all the fairs held in the State the past five years:

Description of Cattle.	1877.	1878.	1879.	1880.	1881.
Shorthorn, per cent	70	70	64	75	61
Hereford "	4	4	3	4	7
Devon "	6	6	5	3	3
Holstein "	4	5	5	2	5
Ayrshire "	2	4	4	2	4
Jersey "	14	11	19	14	20

It will be seen that there is a decrease in the number of entries of Shorthorn, as compared with the previous year. The number of entries of Hereford has increased about 75 per cent., as compared with 1880. The increase in number of entries of Holstein over the preceding year, is 150 per cent.; Ayrshire 100 per cent.; Jersey 70 per cent.

ENTRIES OF HORSES.

The following table shows a slight decrease in the number of Roadster Horses, and an increase in Clydesdale and English Draft over the preceding year of over eight per cent.:

Description of Horses.	1877.	1878.	1879.	1880.	1881.
Thoroughbred, per cent	22	14	20	11	11
Roadster, per cent	48	53	44	58	57
Norman and French Draft, per cent	22	20	23	19	19
Clydesdale and English Draft, per cent	8	13	13	12	13

All the fairs in the State, so far as reported, are included in the above table.

STATE FAIR.

The following table gives the amount of premiums offered by the managers of the Illinois State Fair since its organization in 1853.

It will be seen that the development has been healthy, and that each department has received encouragement in proportion to its importance to the other interests demanding the fostering care of the organization.

The aggregate of the premiums offered are as follows:

Cattle	$66,016
Horses and Mules	78,049
Sheep	23,130
Swine	23,770
Poultry	7,402
Mechanics	12,406
Farm Products	16,054
Horticulture	24,914
Fine Arts	2,207
Textile Fabrics	11,285
Natural History	7,231
Equestrianism	1,291
Education	1,257
Speed	3,440
Miscellaneous	11,926
Total	$290,378

Amount of Premiums offered by the Illinois State Fair—1853–1881.

Place of Fair.	Year	Cattle	Horses and mules	Sheep	Swine	Poultry	Mechanics	Farm products	Horticulture	Fine arts	Textile fabrics	Natural history	Equestrianism	Miscellaneous	Total	Education
Springfield	1853	$435	$185	$150	$105	$13	$130	$112	$154	......	$121	......	......	......	$1,405	...
Springfield	1854	......	......	......	......	......	......	......	......	......	......	......	......	......	4,229	...
Chicago	1855	......	......	......	......	......	......	......	......	......	......	......	......	......	4,229	...
Alton	1856	1,150	1,018	160	140	53	595	350	82	......	427	$180	......	$75	4,230	...
Peoria	1857	3,040	2,255	330	210	151	845	379	180	......	316	175	......	55	7,936	...
Centralia	1858	2,084	2,005	845	200	62	325	164	628	......	204	30	......	......	6,547	...
Freeport	1859	2,324	2,175	665	185	63	360	285	641	......	203	75	......	243	7,209	...
Jacksonville	1860	1,865	3,185	870	285	35	1,770	251	580	130	238	386	......	731	10,326	...
Chicago	1861	2,520	4,415	1,000	795	35	1,123	528	760	424	496	475	......	671	13,272	...
Peoria	1862	1,500	1,630	720	470	36	352	279	396	......	148	240	......	328	6,099	...
Decatur	1863	1,205	1,290	720	400	36	580	454	350	......	148	120	......	378	5,681	...
Decatur	1864	1,385	2,145	830	405	36	55	618	381	......	410	300	......	375	6,940	...
Chicago	1865	1,460	2,264	1,005	410	36	105	634	654	......	461	150	......	345	7,524	...
Chicago	1866	1,460	2,320	1,145	410	38	1,070	720	692	......	458	360	......	660	9,333	...
Quincy	1867	1,705	2,425	1,310	570	54	320	696	1,088	......	464	305	$180	120	9,237	...
Quincy	1868	2,010	2,765	890	570	54	261	637	1,140	75	485	305	330	80	9,602	...
Decatur	1869	2,023	3,110	920	695	64	340	812	1,045	75	475	305	330	60	10,254	...
Decatur	1870	2,320	3,345	1,025	1,400	185	515	867	1,104	95	515	305	......	110	11,786	...
Duquoin	1871	2,820	3,355	785	1,400	255	395	717	993	80	519	305	......	310	11,934	...
Ottawa	1872	3,100	3,535	775	1,400	55	585	725	997	105	531	295	144	280	12,739	...
Peoria	1873	2,970	2,550	775	1,450	257	1,285	717	1,745	145	440	295	88	310	3,027	...
Peoria	1874	3,655	3,845	1,065	1,740	502	185	770	1,790	181	413	300	88	200	11,731	...
Ottawa	1875	3,375	5,430	1,020	1,740	647	185	1,088	1,949	181	421	440	88	475	11,039	...
Ottawa	1876	3,255	3,704	920	1,450	647	195	697	1,252	181	565	340	25	1,580	14,811	...
Freeport	1877	3,595	3,410	660	1,485	663	150	674	1,125	161	588	340	18	1,445	14,814	...
Freeport	1878	3,525	3,940	775	1,420	784	150	684	1,239	96	480	400	......	1,105	14,898	$300
Springfield	1879	3,495	4,001	1,290	1,485	812	180	711	1,289	96	557	235	Speed	1,500	15,856	305
Springfield	1880	3,570	4,001	1,290	1,475	817	180	726	1,474	91	565	235	2,340	500	17,486	322
Peoria	1881	4,220	3,746	1,290	1,475	812	170	759	1,286	91	587	335	1,100	......	16,201	330

PURE BRED STOCK.

The following table shows the number of entries, amount of premiums offered, and the amount of premiums paid to Pure Bred Stock exhibited at the fairs held in the State during the past four years.

Pure Bred Stock,	1878.			1879.			1880.			1881.		
	No. of entries....	Amount of premiums offered ..	Amount of premiums paid ...	No. of entries....	Amount of premiums offered ..	Amount of premiums paid	No. of entries ..	Amount of premiums offered ...	Amount of premiums paid	No. of entries .	Amount of premiums offered . .	Amount of premiums paid . ....
CATTLE—												
Shorthorn	1,961	$11,098	$8,361	2,485	$12,675	$1,291	1,862	$10,189	$8,146	1,253	$9,071	$6,546
Hereford	104	1,159	778	123	1,941	806	102	1,783	671	147	2,395	678
Holstein	137	1,690	726	184	2,284	883	82	1,718	435	75	1,881	608
Devon	151	2,066	931	183	2,759	921	35	935	136	115	1,697	435
Ayrshire	122	1,693	590	176	1,816	676	48	776	165	77	1,417	323
Jersey	324	2,820	1,467	754	3,582	2,135	340	2,900	1,364	401	3,446	1,700
HORSES—												
Thoroughbred	358	3,815	2,208	900	4,929	2,818	293	3,097	1,403	305	3,428	1,571
Roadster	1,423	7,319	6,086	2,046	6,737	5,481	1,638	7,166	6,116	1,638	10,071	8,068
Norman and French Draft	540	2,068	1,238	1,099	3,965	2,587	537	2,531	1,457	543	2,796	1,588
Clydesdale and English Draft	357	1,199	885	602	2,571	1,947	338	2,071	1,277	363	1,681	1,112
SHEEP—												
Cotswold	397	978	722	582	1,132	1,023	259	696	567	384	1,020	712
Leicester and other long wool	479	1,075	798	873	1,805	1,507	602	1,385	1,060	596	1,416	1,055
Southdown	349	1,204	740	517	1,442	1,108	277	1,050	683	181	857	562
Oxford and other downs	....	....	....	165	486	424	177	420	262	250	652	483
American Merino	175	556	415	418	880	677	135	408	322	188	6,681	397
Spanish Merino and other fine wool	291	869	594	496	1,365	954	280	885	602	217	862	502
SWINE—												
Berkshire	1,352	3,927	2,826	1,399	4,410	3,425	776	2,615	1,836	586	2,758	1,563
Poland China	1,752	3,672	2,703	1,955	4,222	3 669	1,007	2,870	2,108	1,042	2,875	1,900
Chester White	604	2,197	1,437	588	2,674	1,743	279	1,718	709	261	1,600	766
Essex	116	769	450	136	881	573	52	456	103	51	688	229
Suffolk	....	....	....	71	516	231	41	267	137	25	411	123
Small Yorkshire	....	....	....	72	323	313	23	109	43	......	76	....

RECEIPTS AND EXPENSES.

The following table gives the receipts and disbursements in connection with the Illinois State Fair since its organization, and when considered with the preceding table, will enable the reader to judge of the relative expenses and receipts since 1853.

The continued economical management of all the financial affairs of of the State fair for over a quarter of a century, is conclusive evidence as to the high business character of the managers, who have cheerfully performed a great service for the State without ever asking or voting remuneration to a single member of the Illinois State Board of Agriculture:

ILLINOIS STATE FAIR.

Place of Fair.	Year........	Receipts including balance........	°Expenses. .	Premiums ...	Expenses and premiums..	Balance in treasury....	Deficit.......
Springfield	1853	$4,751 20	$2,954 04	$944 45	$3,898 49	$852 71	....
Springfield............	1854	6,344 85	1,754 76	3,146 79	4,901 55	1,443 30	....
Chicago..............	1855	14,128 83	9,019 11	2,472 00	11,491 11	2,637 69	....
Alton.................	1856	11,675 64	5,704 73	2,650 00	8,354 73	3,320 91	....
Peoria	1857	19,198 82	6,542 85	8,104 54	14 647 39	4,551 43	....
Centralia........... .	1858	14,436 78	6,926 49	6,306 20	13,232 69	1,203 49	....
Freeport	1859	16,814 69	7,318 31	6,967 46	14,285 77	2,528 92	....
Jacksonville.........	1860	17,348 97	9,137 99	8,881 86	18,019 85	....	$670 88
Chicago..............	1861	14,824 56	9,969 99	4,286 50	14,256 49	568 07	....
Peoria...........	1862	4,836 07	4,870 30	**715 50	5,685 80	....	849 73
Decatur............ .	1863	15,251 70	8,356 59	4,862 00	13,218 59	2,033 11	....
Decatur..............	1864	23,434 82	9,974 16	8,145 88	18,119 74	5,314 08	....
Chicago...........	1865	28,739 06	15,627 84	8,204 00	23,831 84	4,907 22	....
Chicago..............	1866	21,820 41	11,247 39	7,209 55	18,456 94	3,363 47	....
Quincy............	1867	32,974 82	13,298 51	10,608,14	23,906 65	8,068 17	....
Quincy	1868	24,096 92	12,542 42	7,649 50	20,191 92	3,905 00	....
Decatur..............	1869	27,407 70	11,356 95	9,227 79	20,584 74	6,822 96	....
Decatur.............	1870	30,007 71	10,978 25	10,558 28	21,536 53	8,471 18	....
DuQuoin.............	1871	25,186 43	10,261 28	10,060 46	20,321 74	4,764 69	....
Ottawa	1872	29,758 84	9,880 43	10,750 44	20,630 87	9,127 97	....
Peoria.	1873	41,919 87	11,619 21	10,679 92	22,299 13	19,620 74	... .
Peoria.......	1874	44,810 59	14,040 61	12,541 00	26,581 61	*18,228 98	....
Ottawa	1875	26,800 18	12,300 36	13,612 47	25,912 83	887 35	....
Ottawa...............	1876	†24,915 55	13,099 10	5,977 42	19,076 52	5,839 03	....
Freeport	1877	33,514 70	7,921 49	‡16,923 93	24,845 42	8,669 28	... ...
Freeport..............	1878	26,544 73	§8,803 71	12,841 34	21,645 05	4,899 68	....
Springfield...........	1879	31,656 91	‖13,678 56	15,003 96	28,682 52	2,974 39	....
Springfield...........	1880	25,237 76	10,071 82	15,432 76	25,504 58	....	266 82
Peoria.......	1881	25,660 89	10,563 94	15,563 32	26,127 26	....	466 37

° Includes Winter Meeting expenses.
* $10,000 invested in U. S. bonds, $11,250.
† Includes proceeds $10,000 U. S. bonds, $11,250.
‡ Includes 50 per cent. premiums 1876, $5,518.
§ Includes $451 81 account Fat Stock Show.
‖ Includes $1,861 24 account Fat Stock Show.
** No Fair. Premiums on field trial.

OFFICERS AND MEMBERS.

The officers and members of the State Agricultural Society and its successor, the Illinois State Board of Agriculture, since the organization in 1853, are given herewith.

It will be seen that some of the members have devoted nearly an average life-time to the service of the Board.

PRESIDENTS.

Name.	Postoffice.	Term of Office.
James N. Brown.	Berlin	1853, 1854
Harvey C. Johns	Decatur	1855, 1856
C. W. Webster	Salem	1857, 1858
Lewis Ellsworth	Naperville	1859, 1860
W. H. Van Epps	Dixon	1861-1864
A. B. McConnell	Springfield	1865-1868
William Kile	Paris	1869, 1870
David A. Brown	Bates	1871, 1872
John P. Reynolds	Chicago	1873, 1874
D. B. Gillham	Upper Alton	1875-1878
James R. Scott	Champaign	1879-1882

EX-PRESIDENTS.

J. N. Brown.	Berlin	1855, 1856.
H. C. Johns	Decatur	1857, 1858.
C. W. Webster	Salem	1859, 1860.
Lewis Ellsworth	Naperville	1861-1864
W. H. Van Epps	Dixon	1865-1868.
A. B. McConnell	Springfield	1869, 1870
William Kile	Paris	1871, 1872
David A. Brown	Bates	1873, 1874.
John P Reynolds	Chicago	1875-1878
D. B. Gillham	Alton	1879-1882

RECORDING SECRETARIES.

Pascal P Enos	Springfield	1853, 1854.
Simeon Francis	Springfield	1855, 1856
Phil. Warren	Jacksonville	1857, 1858.
John Cook	Springfield	1859-1864

CORRESPONDING SECRETARIES.

Bronson Murray	LaSalle	1853, 1854
John A Kennicott	West Northfield	1855, 1856
Simeon Francis	Springfield	1857-1860
John P. Reynolds	Springfield	1861-1864

RECORDING AND CORRESPONDING SECRETARIES.

John P. Reynolds	Springfield	1865, 1866.

SECRETARIES.

John P. Reynolds	Springfield	1867-1870
A. M. Garland	Springfield	1871-1874
S. D. Fisher	Springfield	1875-1882

ASSISTANT SECRETARIES.

James M. Burney	Springfield	1853, 1854
James J. Dwyer	Springfield	1853, 1854
Charles F. Mills	Springfield	1875-1882

TREASURERS.

E. N. Powell	Peoria	1853
John Williams	Springfield	1854-1858
John W. Bunn	Springfield	1859-1882

VICE-PRESIDENTS.

George S. Haskell, Sr	Rockford	1853, 1854
John A. Kennicott	West Northfield	1853, 1854
J. E. McClun	Bloomington	1853, 1854
Smith Fry	Peoria	1853-1856
M. Collins	Quincy	1853, 1854
H. C. Johns	Monticello	1853, 1854
L. Mitchell	Wayne County	1853, 1854
F Arenz	Arenzville	1853-1856
Cyrus Webster	Salem	1853-1856, 1869-1872
John Gage	Waukegan	1855, 1856
Lewis Ellsworth	Naperville	1855-1858, 1873-1882
William Strawn	Ottawa	1855, 1856
William Ross	Pittsfield	1855, 1856
J. M. Blackburn	Paris	1855, 1856
P. L. Ward	Equality	1855, 1856
Horace Capron	Alden	1857, 1858
J. H. Sipp	Canton	1857, 1858
J. W. Singleton	Quincy	1857-1864
A. B. McConnell	Springfield	1857-1864
William Kile	Paris	1857-1864, 1867-1868, 1873-1874
S. A. Buckmaster	Alton	1857, 1858
Hawkin S. Osborn	Pinckneyville	1857-1867
C. B. Denio	Galena	1859, 1860
W. H. Van Epps	Dixon	1859, 1860
John Garrard	Georgetown	1859, 1860
A. Dunlap	Peoria	1859, 1860
S Dunlap	Jacksonville	1859, 1860
S. B. Chandler	Belleville	1859, 1860, 1865, 1866
C. B. Denio	Galena	1861
Charles H. Rosenstiel	Freeport	1861-1876
A. J. Matson	Prophetstown	1861-1864
R. H. Holder	Bloomington	1861-1864
R. H. Whiting	Galesburg	1861-1864
W. S. Wait	Greenville	1861-1864
John Wentworth	Chicago	1865, 1866
George W. Gage	Chicago	1865-1868
R. P. Lane	Rockford	1865, 1866
Graham Lee	Hamlet	1865-1870
W. A. Pennell	Granville	1865, 1866
O. B. Galusha	Lisbon	1865-1868
J. H Pickrell	Harristown	1865, 1866
G. W. Minier	Mackinaw	1865-1867
John Lasbury	Griggsville	1865, 1866

D. D. Shumway	Taylorville	1865-1868
A. J. Pearcy	Centralia	1865, 1866
H. D. Emery	Chicago	1867-1870, 1873-1882
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David A. Brown	Bates	1867-1870
J. H. Spears	Tallula	1867-1870
Urial Mills	Salem	1867, 1868
D. B. Gillham	Upper Alton	1867-1874
D. T. Parker	Cairo	1867-1876
A. H. Dalton	Dalton Station	1869-1872
A. J. Dunlap	Galesburg	1869-1876
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E. H. Bishop	Effingham	1875-1882
M. T. Stookey	Belleville	1875-1880
George S. Haskell	Rockford	1877-1882
J. L. Moore	Polo	1877-1882
B. Pullen	Centralia	1877-1882
J. M. Washburn	Carterville	1877-1882
J. M. Epler	Virginia	1879, 1880
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Respectfully submitted.

S. D. Fisher, Secretary.

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ELEVENTH REPORT

OF THE

STATE ENTOMOLOGIST

(Walsh, 1 LeBaron, 4 Thomas, 6)

ON THE

NOXIOUS AND BENEFICIAL INSECTS

OF THE

STATE OF ILLINOIS.

Sixth Annual Report

BY CYRUS THOMAS, PH. D.

State Entomologist

SPRINGFIELD.
H. W. ROKKER, STATE PRINTER AND BINDER.
1882.

LETTER OF TRANSMITTAL.

CARBONDALE, ILL., Dec. 30, 1881.

Hon. James R. Scott, President Illinois State Board of Agriculture:

DEAR SIR: In submitting the "*Eleventh Report of the State Entomologist on the Noxious and Beneficial Insects of the State of Illinois,*" allow me to express my thanks to you and the Board for the encouragement I have always received from you in this work.

I am happy to state with even more emphasis than at the time of submitting my previous report, that the demand for these works is still on the increase in our own State and elsewhere. The outside demand has in fact become so great, that I have been compelled to ask your Secretary to meet it, as far as possible, with copies bound with the Transactions of the Board, as the two hundred separate copies allowed me for distribution were wholly inadequate for this purpose.

Although I have material on hand sufficient to make a report about the same size as that of last year, it has been thought best that I cut it down so that it shall not exceed, when printed, one hundred and twenty-five pages.

In the preparation of this report I have been aided by Mr. D. W. COQUILLETT, who resides in the northern portion of the State, and was engaged in making observations for me in that section during the past season; also by Prof. French.

As you are well aware, the predictions I made last year (1880) that the Chinch-bugs would probably appear in injurious numbers in 1881 unfortunately for our farmers has proved only too true. This fact tends strongly to confirm me in the belief that my deductions, drawn from a comparison of the weather records of our State and the adjoining sections, are substantially correct, and that the periodicity indicated in my last report is a climatic law of this portion of our country. Judging, therefore, by this apparent periodicity, and what has been ascertained in reference to the history, habits, and cause of increase of these pests (the Chinch-bugs), I have elsewhere ventured to predict with much confidence that they will do no material injury in 1882.

The Army-worm also appeared in some sections in considerable numbers, injuring chiefly oats and meadows. Mr. Coquillett, who was in the section visited by them, devoted considerable attention to the study of their habits and life-history, in order, if possible, to settle some hitherto disputed points in reference thereto. The result of his observations has to a certain extent modified my opinion on one point, to-wit: the number of broods in that northern section.

It was my intention to have devoted a somewhat lengthy chapter to the general subject of Remedies, but the desire to lessen the size of the report this year has induced me to withhold it, and to devote the space allowed to the papers of those who have assisted me in my Entomological work the past season. Hence the report will consist, this year, of papers prepared by Mr. D. W. Coquillett and Prof. G. H. French.

I take pleasure also in thanking Mr. S. D. Fisher, your Secretary, and Mr. C. F. Mills, Assistant Secretary, for many favors, and especially for complying so readily and promptly with my numerous requests to send reports to parties requesting them. I am also under obligations to W. R. Ackerman, Esq., President of the Illinois Central Railroad, for an annual pass over the roads of this company.

CYRUS THOMAS,
State Entomologist.

PART I.

REPORT OF D. W. COQUILLETT.

Prof. Cyrus Thomas, State Entomologist of Illinois ·

DEAR SIR—The following pages constitute my report on the Injurious Insects of Northern Illinois:

During the year 1881 several insects which had not heretofore been known to occur in destructive numbers in this part of the State, appeared in several localities in considerable numbers, sometimes committing extensive ravages.

Prominent among these is the Corn Worm or Boll Worm (*Heliothis armigera*, Hubner,) which I have occasionally met with in past years, but not in numbers sufficient to occasion much damage.

The present season, however, they appeared in destructive numbers in a great many fields of corn, doing considerable damage, not so much by what they devoured as by what they spoiled, as the ears of corn which they infested were nearly always more or less covered with mould.

Another insect which, so far as I am aware, has not heretofore occurred in this section in destructive numbers, is the Imported Currant Worm, (*Nematus ventricosus*, Klug,) which, the present season, completely defoliated the currant bushes in many gardens in this locality. It is a very singular fact, and one almost without an exception, that the insects which have been imported into this country from Europe are always more destructive than our native insects which have the same habits. The difference in the climate of the two countries may have much to do with this, but it is no doubt largely due to the fact that the parasites which preyed upon them in their native country were not imported with them; for it is a pretty well established fact that nearly every leaf-eating insect has a parasite which infests it, but which will not infest any other species, and for this reason our native parasitic insects will not be likely to infest an exotic insect that has been imported into this country.

As if it were not enough for the currant bushes to be despoiled of their leaves by the insects spoken of, a great many Goose-berry Worms (*Pempelia grossulariæ*, Packard,) appeared, webbing together and devouring or spoiling a great many clusters of its fruit. In their work of destruction they were greatly aided by a Span-worm which had not hitherto been known to feed upon this fruit, at least no account of its doing so has ever come to my notice. I refer to the larva of *Eupithecia interrupto-fasciata*, Packard, to which I have given the name of the *Currant Fruit Worm*. I had frequently found these worms in previous years on various kinds of flowers, but the present season they appeared upon the currants in considerable numbers, and I frequently found one of them half hidden in a large currant, busily engaged in devouring the interior of the berry.

The Chinch Bug (*Blissus leucopterus*, Say,) has not been very destructive in this section the present season, for the simple reason that but a very small area of wheat was sown. The farmers in this part of the State have about made up their minds to abandon the cultivation of this valuable cereal; what with Chinch Bugs, Hessian Flies, blight, rust and smut, their chances of raising a good crop of wheat are certainly not very good. One farmer sowed about two acres of spring wheat, and I know of no other field of wheat within five or six miles of this one. I examined this field for Chinch Bugs on the 22d of July, and found many of all sizes near the middle of the field, where the wheat had been killed in large patches, the plants turning white and bending over a short distance from the ground. This field was harvested on the 26th. Three days later, and again on the 3d of the following month, I examined the edge of an adjoining oat-field, and found only one Chinch Bug. I could not see that they had injured the oats in the slightest degree.

Several years ago, when wheat was more extensively raised in this locality than it is at the present time, the Chinch Bugs appeared in immense numbers in a field of wheat which contained about four acres, nearly ruining the entire field. After this field was harvested the bugs moved across the field in solid phalanx, into a field of corn, and in a short time the lower part of the stalks of corn in the rows nearest the road were covered so thickly with these insects to the height of about two feet, that this part of the stalks was completely hidden from view; but the corn was so far advanced that they did not damage it very materially. A farmer had been told that he could protect his wheat from the attacks of these insects by sowing clover seed with the wheat. This he did, and the clover and wheat grew finely together, and the latter did not seem to be at all injured by the bugs; but as soon as it was harvested these insects appeared in such numbers in the edge of an adjoining field of *Hungarian grass*, as to cause the latter to turn white in a very short time. Whether the Chinch Bugs fed upon the clover in preference to the wheat, or whether the clover prevented the too rapid evaporation of moisture, thus enabling the wheat to withstand the attacks of these insects, I am unable to say; but the latter is probably the correct reason, as the bugs deserted the clover shortly after the wheat was cut, although the clover was as rank as ever. They appear to prefer wheat to all other plants, aud since this has not been grown very extensively in this locality of late, I have not found the Chinch Bugs in anything like the numbers in which they formerly appeared.

A number of farmers have repeatedly tried to grow winter wheat in this locality, but their efforts in this direction have not been crowned with success. In ordinary seasons the ground is too dry to be planted in the early part of September, and the rains usually come on too late to permit the farmers to sow the wheat early enough for it to get a sufficient growth to withstand the winter. Several farmers of my acquaintance have sown a small field of winter wheat in different years; but in nine cases out of ten they were obliged to plow up the field in the following spring and sow it to some other kind of grain. As there is so small an amount of winter wheat raised in this locality, the Hessian Fly (*Cecidomyia destructor*, Say), has not made its appearance in numbers sufficient to attract public attention, as it is necessary for the fall brood of these insects to have winter wheat, in the stems of which they pass the winter in the larva state.

The Colorado Potato-beetle (*Doryphora 10-lineata*, Say) or "Potato bugs," as they are commonly but erroneously called, were more destructive the present season than they have been for many years past. By the liberal use of Paris Green the farmers in many instances were enabled to protect their potatoes from their attacks; but in a great many cases a large proportion of the plants had been defoliated before the poison was applied. The remarks on imported insects which I made when speaking of the imported Currant Worm, apply equally well to this insect; for, although it was not imported from a foreign country, yet its native home was in a climate widely different from our own, and this insect has become more injurious to the potato than any of our native species which feed upon this plant. This may be largely due to the fact that it feeds upon this plant both in its larval and perfect state, whereas the other species, with one or two exceptions, feed upon it only while in the perfect state, living in the ground in the larva state, and feeding upon the eggs of various kinds of locusts or grass-hoppers. These "Old-fashioned Potato-beetles," (as they are commonly called to distinguish them from the Colorado beetle) present a forcible example of those anomalous insects which the entomologist meets with occasionally, and which are so difficult for him to determine as to whether they are to be regarded as injurious or beneficial insects; for it is very difficult for us to decide whether the injury they do in the adult state is counterbalanced by the service they render us while in the larva state by way of destroying the eggs of the destructive locusts or grass-hoppers.

The Imported Cabbage-worm (*Pieris rapae*, Linnaeus) was more destructive to cabbages the present season than I have ever known it to be in any season past. A few farmers who had taken the trouble to set out and cultivate a small patch of cabbages, finding that these were fast being devoured by these noxious pests, pulled them up and fed them to the hogs. Farmers generally think that it is enough for them to do to keep their cabbages free from weeds, without the additional labor of keeping them free from the attacks of insects; and this latter, so far as the Cabbage-worms are concerned, is commonly much more troublesome than the mere destruction of the weeds. It is to be regretted that no harmless inexpensive but effectual remedy has ever been discovered for the destruction of these pests.

I do not think that the Purple Cabbage-worm (*Pionea rimosalis*, Guenee) has ever made its appearance in this locality; at least I have never met with it, although for the past two or three seasons I have paid especial attention to collecting and rearing Lepidopterous larvae. The present season a closely allied species—the *Pionea stramentalis* of Hubner—appeared in considerable numbers upon the Horseradish, and as almost every insect which feeds upon the horseradish will also feed upon the cabbage, I have no doubt that this insect will some day prove to be destructive to this last named vegetable which already has a host of insect foes.

The Army Worm (*Leucania unipuncta*, Haworth) appeared in a few localities in destructive numbers and seemed to be more destructive to oats and timothy than to any other grain or grass. I am happy to be able to present in the following pages a history of this insect which is carried far enough to forever set at rest the question of the number of annual broods, and the state in which the insect hibernates, at least so far as they apply to this locality, and also to the *sedentary* race of Army Worms, for it is my firm belief that there are two distinct races of these insects, and that the one race has no connection whatever with the other. As I have given in the chapter upon this insect the reasons upon which this belief is founded, it will be unnecessary for me to repeat them in this place. My brother, Mr. A. G. Coquillett, has aided me much in studying up the life history of this insect; he brought me the only specimens of the hibernating brood that I have ever seen. I had found many specimens of the earlier broods under boards, sticks, etc., but was unable to find a single specimen of the last, or hibernating, brood in these situations, although I spent much of my time searching for them.

A kind of naked caterpillar somewhat resembling the Army Worm appeared in considerable numbers in the months of August and September, and was quite destructive to the green heads of timothy. They were found at their work on cloudy days and appeared to confine their attacks entirely to the heads, as I never saw any feed upon the leaves. In quite large fields of timothy which I examined fully nine-tenths of the heads had been more or less injured by these worms. The latter quite closely resemble the Wheat Head Army-worm (*Leucania harveyi*, Grote) but are much paler; they may be but a pale race of this species, however, as the sedentary race of Army-worms are considerably paler than those belonging to the migrating race. Quite a number of these timothy worms assumed the chrysalis form, in the month of September, but as they have not yet been changed to moths I am unable to determine the species.

On the 21st of November I received from the Editor of the Germantown *Telegraph* a box of insects for determination. The enclosed insects proved to be the larvae of the Silver-marked Moth (*Plusia simplex*, Guenee), and in the letter which accompanied the box, the Editor stated that these larvae were very destructive to the Celery in many gardens in his locality. This is the first instance that has come to my notice of these larvae feeding upon this plant. In my father's garden they were quite destructive to Lettuce in the early part of the present season. As the Editor mentioned above named these larvae *Celery Worms* in one of his editorials, I have thought it best to accept his name.

The various kinds of Canker-worms were very scarce the present season in orchards where they appeared in large numbers in past years.

The Apple Plant-louse (*Aphis mali*, Fabricius) was very abundant early in the season, but the rains which came on later in the season greatly lessened their numbers. I have frequently destroyed whole colonies of these insects by drenching them occasionally with pure cold water.

Several other insects, many of which have not been reported as occurring in destructive numbers, appeared in considerable numbers, sometimes committing extensive ravages; but as these are mostly treated of in the following pages an account of them here would be superfluous.

As several entomologists, in determining the insects treated of in their reports, have made mistakes in their determinations, I have made it a rule to have my insects determined by some person who makes a certain group of insects his special study, except in cases where the insect differs widely from any other, and has been described at some length in some work on entomology to which I have access. And in this connection I desire to express my thanks to the following gentlemen for favors received by way of determining insects: Prof. C. H. Fernald, A. B. Grote, E. F. Cresson, Dr. A. S. Packard, Jr.; H. A. Hagan, P. R. Uhler, and Dr. Geo. H. Horn.

And above all I am indebted to you for a great many favors received, and for which I fear I shall never be able to make anything like an adequate return.

Very respectfully,

D. W. COQUILLETT.

WOODSTOCK, ILL., Dec. 28, 1881.

in the remainder it was colored as in variety C, or D. Thus I have found on the cherry a number of these Leaf-rollers, which had the head colored as in variety B, but while in some the cervical shield was colored as in this variety, in others it was colored either as in variety A, or C.

The *Penthina nimbatana* of Clemens is utterly indistinguishable from variety A of the Greater Leaf-roller; at least specimens of the latter agree perfectly with the description of the former which I took several years ago, although there may be some minute character or characters by which the one may be distinguished from the other. I have bred *Penthina nimbatana* only from the common wild-rose (*Rosa blanda*). It binds three or more of the terminal leaflets together for a habitation, and there appears to be only one brood produced in one season. The Greater Leaf-roller feeds upon a greater number of different kinds of plants than any other insect with which I am acquainted. I have bred it from the Apple, Cherry, Siberian Crab-apple, Lilac, Horse-chestnut, Tame Raspberry, Wild Strawberry, Wild Rose (*Rosa blanda*), Burdock (*Lappa officinalis*), Thistle (*Cirsium lanceolatum*), Red Clover (*Trifolium prætense*), Ragweed (*Ambrosia artimisiaefolia*), Smartweed (*Polygonum pennsylvanicum*), and Knot-grass (*Polygonum aviculare*); and I have found it on Dogwood (*Cornus peniculata*), Burr-oak, Poplar, Hazel (*Corylus americana*), Sumac (*Rhus glabra*), Wild Raspberry (*Rubus Strigosus*), Wild Blackberry, (*Rubus villosus*), Horseradish (*Nasturtium armoracia*), Wild Sunflower (*Helianthus grosse-serratus*), and Blue Vervain (*Verbena hastata*). On all of the above named plants I have found one or more of these Leaf-rollers, each in a rolled or folded leaf, or in a cavity formed by fastening two or more leaves together. On two or three different occasions I found one of them in a cavity formed by fastening together several of the terminal flower spikes of Blue Vervain, and in one instance I found one in a cavity formed by fastening together several of the strap-leaves or rays of a Sunflower to the tops of the disk-flowers.

From the above it will be seen that these Leaf-rollers feed not only upon the leaves but also upon the flowers; and even the fruit is not exempt from their attacks, for on one occasion I found one under a leaf which it had fastened to an apple, into which it had gnawed quite a large cavity.

The moth into which the Greater Leaf-roller is finally transformed, was, many years ago, named by Dr. Harris the "Oblique-banded Leaf-roller." It measures from the front of the head to the tip of the closed wings from three to five-eighths of an inch, the females being the largest. The fore-wings are of a deep cinnamon-brown color, marked with numerous darker transverse dashes, and crossed obliquely by three darker brown bands, one near the base, one near the middle, and the third near the outer edge of the wing. The outer one-half of each hind wing is pale yellowish, shading into white at the base of the wing; the inner one-half is blackish. One would naturally suppose that an insect having such a wide range of food plants would be very variable in its colors and markings, but such is not the case with the present species. In a series of fifteen examples now before me the ground color and markings are remarkably constant with two exceptions; the specimens forming these exceptions are both females, and differ from the others only in the ground color. In one this is pale yellow, and in the other it is brownish strongly suffused with black. I am not acquainted with any moth that would be at all likely to be mistaken for this species. When the wings are closed the outer edges are nearly parallel with each other, and the hind edge of one wing is nearly on a line with the hind edge of the other.

NATURAL ENEMIES.

As the Greater Leaf-rollers during the greater part of their lives are concealed from view, it is very probable that they suffer but little from the attacks of predaceous birds and insects. However this may be, their numbers are considerably lessened by the attacks of a parasitic four-winged fly. I sent a specimen of this parasite to E. T. Cresson for determination, but he was unable to ascertain the species to which it belongs; he informed me that it belongs to the genus *Glypha.*

The wings of this parasite are transparent, and expand about five-eighths of an inch. The head, thorax and abdomen are jet black, and there is usually a small, yellow spot just back of the middle of the thorax, and a short streak of the same color in front of, and a little below the insertion of each fore-wing; the mouth parts are also yellowish. The antennæ are deep reddish-brown. The legs are reddish-brown, and the tibiæ and tarsi of the hindmost pair are blackish. The female fly is provided at the tip of her abdomen with an exserted ovipositor which measures a trifle over three-eighths of an inch in length; this is composed of three separate pieces, or threads, the two uppermost of which are black and the lower one is dark reddish-brown.*

The female fly punctures the body of the Leaf-roller and deposits therein a single egg. From this egg is hatched a footless grub, of a dull, bluish-white color, and measuring when fully grown about one-half of an inch in length. This grub reaches its full size about the same time that the Leaf-roller, whose body it inhabits, closes its case and is prepared for pupation; shortly after this the grub issues from the body of its host and spins a thin, whitish, transparent cocoon, of an oblong, elliptical shape, and measuring about five-eighths of an inch in length. Soon after completing its cocoon the parasitic grub assumes the pupa form.

The pupa is of a dull whitish color, and measures about seven-sixteenths of an inch in length. The eyes are black and there is a spot of the same color on top of the first, second and third abdominal segments, that on the second segment being the largest; the wing-cases are tinged with black. The ovipositor of the female is also tinged with black, and is bent over the back and soldered or fastened to it, reaching nearly to the middle of the second abdominal segment.

The flies of both broods issue in from eight to twelve days after the grubs have spun their cocoons, and I have found them as late

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*This parasite very closely resembles the *Pimpla inquisitor* of Say, which I have bred from the Apple-leaf crumpler (*Phycita nebula,* Walsh), but is at once distinguished from it by the yellow spot on the middle of the thorax above.

as the last week in August. The past season fully one-half of the Greater Leaf-rollers were destroyed by these parasites. These are the only parasites that I have ever bred from these Leaf-rollers, but it is very probable that other kinds of parasitic insects also infest them.

On the 13th of August I found in a cavity of leaves on a ragweed a Greater Leaf-roller on whose body were no less than six Tachina eggs. One of these eggs was placed on the cervical shield, one on each of the segments four and seven, two on the under side of segment four, and one on the under side of segment five. The next day there issued from the body of the Leaf-roller a single grub of the parasitic fly described above. This would seem to indicate that some kind of Tachina fly also preys upon the Greater Leaf-roller.

On the 5th of July I found in a rolled leaf in a hazel bush a Greater Leaf-roller which had a Tachina egg attached to the posterior edge of the cervical shield. In the same roll was an ellipsoidal, whitish cocoon which measured about three-sixteenths of an inch in length. I placed both the Leaf-roller and the cocoon in one of the breeding cages, but did not succeed in obtaining anything from either of them.

On the 17th of July I found a cocoon similar to the above in a rolled apple leaf inhabited by a Greater Leaf-roller that was only about one-half grown. Nine days later a small, four-winged fly—the *Perilitus limidiatus* of Cresson—issued from this cocoon.

The wings of this fly are transparent, and expand a trifle over one-fourth of an inch. The head is yellowish-brown, and the eyes and a small spot on top of the head are black; on this spot are three small tubercles (*ocelli*). The anterior one-half of the thorax is yellowish; the remaining portion is blackish. The abdomen is black, with a broad, transverse, yellowish-brown stripe across the middle. The legs and underside of the body are pale yellowish-brown, slightly tinged in places with black. The antennæ are light yellow, and are clouded and ringed with black.

Whether the fly lives in its larval state within the body of the Greater Leaf-roller or not I am not prepared to say. Dr. LeBaron has reared a closely allied species—the *Perilitus indigator* of Riley—from the Walnut Leaf-crumpler (*Acrobasis juglandis*, LeBaron),* and from the situation in which the cocoon of the *dimidiatus* was found it renders it pretty certain that this is a true parasite of the Greater Leaf-roller.

The late B. D. Walsh, formerly State Entomologist of Illinois, compares the working of these parasites upon the Caterpillars to a great many springs, all of which exert a certain amount of pressure upon each other; remove one of the springs, and one or more of the others will suddenly spring upward. So if the parasites of any noxious insect are destroyed, this insect will suddenly appear in large numbers where formerly it was almost unknown. It becomes our duty then to ascertain what it is that destroys these parasites and if possible to circumvent it in its work.

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*See the "Fourth Annual Report on the Noxious, Beneficial and other Insects of the State of Missouri;" page 43.

These parasites are day-flies, and as they resemble flies it follows that the birds commonly called "fly-catchers"—especially the Swallows—are instrumental to a certain degree in their destruction. The Swallows have for many years held a very conspicuous place among the birds which the law protects, owing, no doubt, to the fact that they have never been known to feed upon grain or seeds of any kind. It is my opinion, however, that they are not so beneficial as they are supposed to be. In the first place. as they are on the wing only in the day time, it is evident that they do not catch very many of the really injurious insects, such as the parents of the Army Worm, Canker Worm, etc., which are never on the wing in the day time, except when disturbed.

The Swallows are commonly supposed to feed upon flies, the majority of which cannot be said to be very injurious to the agriculturist. In their early stages many flies live in excrementitious matter, thus aiding in removing this filth out of the way. Those flies which infest our houses are usually looked upon as decided nuisances; yet it is evident that the Swallows catch but few of these. The flies that are so troublesome to horses and cattle are no doubt caught in large numbers by these birds. But as nearly all the internal parasitic insects resemble flies—and these insects are far more beneficial than any other kind—and as the greater number of them are day-flies, it is very probable that they form the principal diet of the Swallows.

Now it is very evident that the Swallows were designed to keep these parasites from becoming so numerous as to utterly annihilate the species of insect which they infest; but as Man has constantly waged war against the birds of prey which were intended to keep the Swallows in check. it very naturally follows that the Swallows will, in time, become so numerous as to so far annihilate the parasites of many insects as to allow the insects to become excessively multiplied. This is no doubt the reason that many insects become so numerous as to attract universal attention.

I do not advocate the complete annihilation of the Swallows, but have merely given the facts in the case, so that our agriculturists may be enabled to judge for themselves the position which these birds ought to occupy.

REMEDIES.

Where the Greater Leaf-rollers appear in limited numbers they may be destroyed by crushing them with gloved hands while in their cases, but when they appear in destructive numbers it will be necessary to employ some other method. In such cases the infected trees may be sprinkled with a solution of London Purple or Paris Green and water, as recommended for the Yellow Canker Worm.

THE APPLE-BUD WORM.

(*Eccopsis malana.*) Fernald.

Order LEPIDOPTERA. Family TORTRICIDÆ.)

[Devouring the buds at the terminal ends of the branches of apple trees, and, later in the season, living in a short, yellowish tube or case, and feeding upon the leaves; a small, naked caterpillar, of a greenish or reddish color.]

In the early part of the season many of the orchards in Northern Illinois present a blasted appearance on account of the leafless condition of the terminal ends of many of the branches. This partial defoliation is the work of a small greenish worm, which devours the terminal buds, and afterwards feeds upon the leaves growing near the outer end of the branch. They seem to confine their attacks wholly to trees of the Apple kind, as I have never found them upon any other trees than the Apple and the Transcendent Crab-apple, a tree which appears to be a cross between one of our common Apples and the Siberian Crab-apple.

These Bud-worms are of a yellowish-white color, and are tinged on the back with pink or green. The head and cervical shield are yellowish; the former is marked with a black dot on each side above the jaws, and the jaws are tinged with reddish.

The eggs from which these worms hatch are deposited singly upon the terminal buds, and the young worms, after devouring the buds, fasten the petiole, or leaf-stalk of the leaf which grows nearest the terminal end of the branch, to the branch, forming a sort of burrow between the leaf-stalk and the branch. This leaf formerly grew at the base of the terminal bud, but by the time that the Bud-worm has devoured the terminal bud, the latter has, by the formation of new wood below it, been pushed away from the leaf to the distance of two or three inches; and it is to this newly formed wood that the petiole of the leaf is fastened.

This Bud-worm usually remains in its burrow during the daytime, and comes forth at night to feed upon the blade of the leaf whose petiole it had fastened to the branch. After devouring this, it feeds for a time upon the newly-formed wood at the end of the branch, sometimes burrowing a short distance into it.

In a short time it deserts its burrow and constructs a yellowish, woolly tube or case upon one of the leaves. In this case it spends the greater part of its time, coming forth only to feed. After consuming the leaf upon which its case is placed, it drags the latter to another leaf, and proceeds in this manner until reaching its full growth, when it prepares for pupation by closing its case with a lid of silk.

The worms in the cases differ so much in color from those found in the burrows that they might easily be taken for a different species. They are now of a dark flesh-color, and are marked with numerous polished piliferous spots, which are concolorous with the body. The head and cervical shield are polished black, and the latter is sometimes tinged with reddish; the thoraccic legs—those under the fore part of the body—are marked with reddish-black. When fully grown, this Bud-worm measures about one-half of an inch in length.

This Bud-worm quite closely resembles the Apple-leaf Crumpler (*Phycita nebulo*, Walsh,) which also lives in a case on Apple trees, but is at once distinguished by the head, which in the latter is nearly vertical and roughened, whereas in the Bud-worm it is nearly horizontal and highly polished. The cases of these two insects also differ considerably. That of the Apple-leaf Crumpler is of a blackish color, and tapers to one end, while that of the Bud-worm is pale-yellowish, and of no definite shape, being usually a short tube somewhat woolly on the outside, to which small pieces of dried leaves are commonly attached. In a few rare instances I have found its case nearly hidden from view by having a leaf drawn around it and fastened with silken threads; but it is usually placed upon the upper side of a leaf, in plain view.

There is only one brood of these Bud-worms produced in one season, and these reach their full size about the middle of June. They assume the chrysalis form soon after closing their cases, and are changed to moths a week or so later.

The fore-wings of the moth expand about one-half of an inch; at the base and tip of each wing is a large grayish-brown spot—that at the base of the wing the darkest, that at the tip mottled with white; between these two spots the wing is white and is mottled with grayish-brown, especially along the front edge of the wing. The hind-wings are dusky.

The tips of the branches infested with the Apple Bud-worms die back to the base of the first perfect leaf. Here a new bud is formed, which is destined to become the terminal bud, as the former terminal bud is destroyed; and the wood from this new bud to the tip of the branch soon afterward dies and falls off. As this new terminal branch does not grow from the extreme end of the branch there will always be a curve at its base which greatly mars the beauty of the tree, besides preventing it from growing as rapidly as it otherwise would.

The most relentless enemy of these Bud-worms is a small black four-winged fly which deposits its eggs in the bodies of these worms, only one egg being consigned to each worm. From this egg hatches a small footless maggot, which lives within the body of the Bud-worm until the latter has closed its case and prepared for pupation, when the maggot issues from the body of the worm, soon after which the latter dies. As soon as it issues the maggot spins in the silken case of its host a tough white nearly transparent cocoon of an ellipsoidal shape and measuring about one-fourth of an inch in length. Shortly after this it casts its skin and assumes the chrysalis form, from which the perfect fly issues in from one to two weeks.

This fly—the *Microdes carinoides* of Cresson—expands about five-sixteenths of an inch; the wings are transparent, slightly clouded, and have a golden and green reflection; the body, head and antennæ are black; at the base of the abdomen below is a honey-yellow spot; the coxæ of the hind legs are black, those of the other legs are yellowish-brown; the femur, or thigh of each leg, is yellowish-brown, and those of the hind legs are marked at the tip with a small dark-brown spot; the tibiæ, or shanks, are pale-yellow, with the exception of the lower one-half of the hind tibiæ, which are blackish; the hind feet are dark-brownish, marked with small blackish spots; the remaining feet are pale-yellow, tipped with black. The female is provided at the tip of her abdomen with a black ovipositor, which is nearly as long as her body. The male I have never seen, but it is probable that he closely resembles the female with the exception of being entirely destitute of the long ovipositor.

In regard to artificial remedies for keeping these Bud-worms within due limits, the only one which suggests itself to me is to destroy the worms before they have left their burrows, as they are much easier found at this time than after they have deserted them and constructed their cases upon the leaves. As they usually infest the buds which grow at the terminal end of the lower branches, these may be easily cut off and collected in a basket or other convenient receptacle and burned. The time for doing this will vary with the different seasons, and in different latitudes. The past season (1881) I found a great many in their burrows on the last day of May; two weeks later the most careful examination failed to discover a single specimen in the burrows. From this it will be seen that any day prior to the middle of June these Bud-worms are to be found in their burrows, and probably the first week in June would be as good a time as any for collecting and destroying them, as the majority of them would then be in their burrows, and their depredations would render their presence very conspicuous.

The leafing out of the Apple trees would, perhaps, furnish a good criterion for determining the time when the Bud-worms are to be found in their burrows. In this locality this event occurred the past season (1881) about the second week in May; in a general way therefore we may say that the best time for collecting and destroying these insects is about three weeks after the Apple-trees have put forth their leaves; and this rule holds good for every season and in every locality.

After the Bud-worms have left their burrows and constructed their cases upon the leaves, they may be destroyed by syringing the infested trees with the poisonous solution recommended for the Yellow Canker-worm; but as this is a much more dangerous method than the one suggested above we cannot recommend it except in cases where the trees are also badly infested with some other kind of leaf-eating insect which can best be destroyed by the use of the poisonous solution, when the same application will also destroy the Bud-worms.

THE APPLE-WORM.

(*Carpocapsa pomonella*, Linnæus.)

(Order LEPIDOPTERA. Family TORTRICIDÆ.)

[Living in apples, crab-apples, and various other fruits; a naked whitish caterpillar or worm whose body is provided with sixteen legs.]

The Apple-worm is one of the most widely distributed and best known of all the insects which infest the apple. It is also one of the worst enemies with which the orchardist has to contend. Destroying as it does the very object for which the apple-tree is grown, its fruit, it is far more injurious than those insects which feed upon the leaves; for, when defoliated, the tree possesses the power of putting forth another crop of leaves the same season; but when its fruit is destroyed, it never bears a second crop the same year.

About the middle of May the parent of the Apple-worm, commonly called the Codling Moth, deposits her eggs singly upon the young fruit, usually placing them upon the blossom end, but sometimes also upon the opposite end, and rarely upon the sides. As soon as hatched the young worm burrows into the fruit, casting its excrements and other refuse matter out of the hole by which it entered the fruit; these castings become collected around the mouth of the burrow, and thus plainly indicate the presence of the worm in the infested fruit. The worm reaches its full growth in about one month, and then measures about one-half of an inch in length. Its body is provided with sixteen legs, is of a pale yellowish-white color, usually tinged on the back with pale pink, and marked with a number of pale brownish raised spots; the head and cervical shield are grayish or reddish-brown. Several other larvæ, as worms, also live in apples, but these may readily be distinguished from the true Apple-worm by being entirely destitute of legs, the Apple-worm, as stated above, being provided with sixteen.

These legless worms are usually the larvæ or young of various kinds of weevils, or snout beetles as they are sometimes called, on account of having the fore-part of the head drawn out in the form *of a snout or proboscis; some,* however, are the larvæ of certain *kinds of two-winged flies*

When about to assume the chrysalis form the Apple-worm *deserts the fruit and crawls beneath a piece* of loose bark, or any object which offers it a shelter, and, after gnawing out a small cavity, spins *therein a small, whitish cocoon.* The worms of the first brood are changed to chrysalids shortly after spinning their cocoons, but those of the last brood remain in their cocoons all winter, and are changed to chrysalids in the month of April of the following year. From this it will be seen that there are two broods produced in one season, but these overlap each other, so that worms of different sizes may be found at almost any season of the year. The fruit infested by the first brood usually falls to the ground before the worms have left it, but that infested by those of the second brood generally remains upon the trees until gathered, and the worms are thus carried to the storehouse or cellar.

In our warfare upon this insect our first work in the spring should be to thoroughly examine the barrels and bins in which apples have been stored, and carefully destroy all of the worms and chrysalids that can be found; this can probably be done with the least labor by the use of hot water. As the winged insects make their appearance they should also be destroyed: they will usually be found upon the windows of the rooms in which apples have been stored, and I have taken them in such situations as late as the first week in July. Later in the season the ground beneath the infested trees should be examined daily, and the fallen apples gathered and either fed to the hogs, or such use made of them as will destroy the worms which they contain; or if the hogs are allowed to remain in the orchard they will devour the fallen fruit, and thus save us the trouble of gathering them. Previous to giving them this privilege, however, it would be well to drive a number of stakes firmly in the ground around each tree, otherwise the hogs will girdle the trees, and do more injury than their services as destroyers of the Apple-worm would amount to.

About the first of June, bandages of leather, felt or paper should be placed around the trunks of the infested trees; the worms, while descending the trees in search of a sheltered place wherein to spin their cocoons, finding these bandages just suited to their purpose, will crawl beneath them and spin their cocoons. Previous to applying these bandages the loose bark should be scraped from the trunk and larger branches of the trees, as many of the worms will take up their abode beneath this, and thus the efficacy of the bandages will be greatly diminished. The best time for removing the loose bark is in the latter part of April, or about two weeks before the apple-trees put forth their leaves. As many noxious insects—especially the Canker-worm Moths—deposit their eggs beneath the loose bark, by removing it many of these will be destroyed; and thus by one operation we not only lessen the ravages of these pests, but also add greatly to the neat appearance of the trees. When paper bandages are to be employed, common straw wrapping paper may be used. This is usually sold in sheets eighteen by twenty inches, and each sheet folded thrice upon itself gives eight layers between two and three inches wide, and long enough to reach round most ordinary trees. A better material to use for these bandages is felt, or some pliable leather; a bandage of either of these materials of one thickness will answer every purpose, and, besides being more durable than paper, requiring less time in their construction, they possess furthermore the advantage of being without folds wherein the worms could find a hiding place instead of *beneath* the bandage. Having obtained a piece of leather or felt, cut out a strip about four inches wide and long enough to reach around the trunk of the tree and overlap an inch or more; tack one end of this bandage to the tree, driving the tacks in to the head; now pass the other end of the bandage around the tree and fasten this end to the one first tacked down by driving a tack through both. This last tack should not be driven in its whole length, as it will be necessary to withdraw it occasionally. About two weeks after the bandage has been placed on the tree the tack should be withdrawn, the bandage unwound, and the worms and chrysalids found beneath it should be destroyed, after which the bandage may be replaced and the tack be driven in as before. It will be necessary to repeat this operation about every two weeks throughout the season, or until all of the apples are harvested.

This bandage system, if persisted in throughout the entire season, will undoubtedly do much toward extirpating the troublesome Apple-worms, not, however until the latter have done all the damage that they are capable of doing. Another method of exterminating these worms, and one which will destroy them before they have had time to commit very serious depredations, is now rapidly gaining favor with many orchardists. It is simply to spray the infested trees with a solution of Paris Green or London Purple, using about two table-spoonfuls of the former or one of the latter to two gallons of water. Prof. A. J. Cook, of the Michigan Agricultural College—who strongly recommends this method—states* that on the twenty-fifth of May, and again on the twentieth of June, he thoroughly sprayed the same Siberian Crab-apple trees with this solution. The fruit of these trees had been seriously injured by the worms whenever they had borne in former years; yet a careful search made on the nineteenth of the following August failed to discover a single injured apple save a few into which the worms had burrowed a short distance before the liquid had been applied; while the fruit on other trees only a few rods off, but not sprayed with the liquid, was very much infested with the worms, from one-fourth to one-half being "wormy." To ascertain whether the fruit had retained any of the poison, he cut about one hundred pieces from the blossom end of as many different apples—the part where the poison would be most apt to find a lodgment—which grew in places that had been sprayed so much as to destroy the foliage, and submitted them to a chemist for analysis; the chemist could find no traces of the poison, it having been applied so early in the season that the rains had washed it all off. As the manner of applying the poison to the trees has been given in the article on the Yellow Canker-worm, it will be needless to repeat it here.

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*In a paper on "Two new methods of fighting injurious insects," read before the American Association for the Advancement of Science, Boston, 1880.

Should future investigations confirm the foregoing experiments—and I have not the slightest doubt that they will—then this method will be much more effectual than any other now known; and as the poison is applied to trees in the spring or early part of the summer, not only will the Apple-worms be destroyed by it, but it will also destroy the Canker-worms and other leaf-eating insects.

THE CURRANT FRUIT WORM.

(*Eupithecia interrupto-fasciata*, Packard.)

(Order LEPIDOPTERA. Family PHALÆNIDÆ.)

[Eating out the interior of green Currants, a greenish, ten-legged span-worm, having a row of brownish spots on the back.]

The Currant appears to suffer more from the attacks of insects than any other of our small fruits. Its stems are infested by no less than three different kinds of borers; its leaves are devoured by two kinds of False Caterpillars, by four or five different kinds of Span-worms, and by a great number of sixteen-legged caterpillars. Its fruit is devoured by two different kinds of insects—the Gooseberry Worm (*Pempelia grossularia,* Packard), and by the Span-worm now under consideration, and to which I have given the name of the *Currant Fruit Worm.* It is at once distinguished from the Gooseberry Worm—the only other species known to me to attack currants—by never living in a silken tube, and also by its legs, which are only ten in number, while the Gooseberry Worm is provided with sixteen.

During the past season (1881) the Currant Fruit Worms appeared in considerable numbers in this locality (McHenry county, Ill.,) doing much damage; not so much by what is devoured as by what is spoiled, as its usual habit is to eat a large hole in one side of the berry, devour the interior, and leave the remaining part untouched. In this way its ravages were of a more serious nature than they would have been had it devoured the whole berry; and as if this were not enough to bring upon it the odium of the whole race, it has the pernicious habit of selecting the largest, finest berries upon which to feed. Besides the currant, it also appeared in limited numbers upon the raspberries, but these did not appear to be so pleasant to its tastes as the red currants. I have also found it feeding upon the pistils and stamens of a great many different kinds of flowers.

It first makes its appearance about the second week in May, and is to be found from this date up to the fore part of October. When fully grown it measures about five-eighths of an inch in length; it varies considerably in its colors and markings. Its body is pale greenish-ash or yellowish-green, and is marked with a dark colored dorsal and sub-dorsal line, but the latter is sometimes wanting. On the dorsal line is usually a row of lozenge-shaped, dark colored or brownish spots, but these are sometimes entirely obsolete; there is sometimes a yellowish or brownish line below the spiracles; on the posterior end of the last segment are two short greenish spines; the under side of the body is white, or pale greenish, with a yellow line in the middle. The head is still more variable in its markings than the body; it is usually greenish or yellowish, but is sometimes light-brown, and more rarely it is of a pale ash color, striped vertically with about four brown dashes.

This Fruit Worm is provided with only ten legs, and I am not acquainted with any other Span-worm that would be at all likely to be mistaken for it. When about to pupate it crawls beneath leaves or any other objects that offer it a place of concealment, and forms a sort of rude cocoon by drawing several leaves around its body, and fastens them with silken threads.

The moth into which the Currant Fruit Worm is finally transformed may frequently be seen resting upon the side of a house or fence, its wings outstretched and closely appressed to the surface upon which it rests. Its fore-wings expand from one-half to five-eighths of an inch, are of a bluish-gray color, and the most conspicuous markings are two blue dots, one near the center of each wing; a short distance outside of these dots the wings are crossed by a dark colored line; on the front or costal margin of each wing are a few black dots. The hind wings are paler than the fore ones, and are usually crossed near the middle by a black line.

When these Fruit-worms appear upon the currants in destructive numbers, they may be destroyed by dusting the infested fruit with insect powder, or with powdered white hellebore; and it is very probable that dusting lime upon them when the dew is on will also destroy them.

As these worms appear at the same time as the Imported Currant Worms (*Nematus ventricosus*, Klug), it is very probable that any remedy used to destroy the latter will also destroy the Fruit Worms.

THE YELLOW CANKER WORM.

(*Hibernia Tiliaria,* Harris.)

(Order Lepidoptera Family Phalænidæ.)

[Feeding upon the leaves of Apple, Elm and various other trees and shrubs; a naked ten-legged span-worm of a yellowish color, marked on the back with ten black lines.]

During the years 1879 and '80 many orchardists in Northern Illinois suffered severely from the attacks of a kind of Span-worm which many persons supposed to be the common Canker-worm (*Anisopteryx vernata,* Peck.) In the month of June of the above years these insects appeared in the orchards in such numbers that the leaves on the infested trees soon presented the appearance of having been riddled with shot; and the hazel-bushes in the adjacent woods were so infested by them that by the middle of summer scarcely a whole leaf could be found upon them. In the last named year (1880) I noticed that many of these Span-worms had a number of raised white spots on the anterior part of their bodies; I examined many hundreds of the worms, but could scarcely find one in fifty that did not have from one to six of these spots upon it. These spots were, very probably, the eggs of some parasitic insect. I enclosed in one of my breeding cages several of these Span-worms, each of which had a number of these spots upon it, and supplied them with food until they entered the earth for pupation; but I did not succeed in obtaining either moths or parasites from them. In the dirt in which they buried themselves, however, I found a pupa evidently of some kind of Tachina fly, but, as it did not produce the mature insect, the species could not determined. These parasites seem to have accomplished the work of destruction much more thoroughly than man possibly could have done; for where last season these Span-worms could have been counted by the thousands, the present season (1881) there was scarcely as many individuals.

The Span-worms referred to above were, many years ago, named "Lime-tree Span-worms," by Dr. Harris, from the supposition that they preferred the lime-tree to all others; but in this locality they do not seem to have a preference for any particular tree or shrub, and as they have become so injurious to the orchards, and so closely resemble the Canker-worms both in habits and general appearance, I have thought it best to give them a more appropriate name, and therefore have named them the *Yellow Canker Worms.*

These insects issue from the eggs about the first week in May, or soon after the Apple-trees have put forth their leaves, and immediately commence their work of destruction. This period of their lives extends from the above date to the last week in June, when, having attained their full size, they descend to the ground and enter it to the depth of three or four inches. Here each one forms a small cell, lining it with a few strands of silk, but not spinning a perfect cocoon. In a short time they cast off their skins and enter the chrysalis state, in which state they remain until about the middle of October, when they are changed to moths. Dr. Harris states* that some of the moths do not issue from the chrysalis until the following spring, but in this locality I have never taken any in the spring, although I have repeatedly searched for them. The female moth is wingless, about one-half an inch long, of a whitish color, dotted with black and marked on the back with two rows of black spots, and with a row of smaller black spots low down on each side of the body; the legs are ringed with blue and white. As soon as she issues from the chrysalis she ascends to the surface of the ground and makes her way to the nearest tree, which she ascends for the purpose of depositing her eggs. Here at twilight she is joined by the winged male, and after impregnation she deposits from two hundred to three hundred eggs, secreting them in crevices and under the loose bark of the trunk and larger limbs. In doing this she crawls around the trunk or one of the larger branches, dragging her long ovipositor after her, the last part of it being held at nearly right angles to the surface on which she crawls; and whenever the tip of it sinks into a crevice she deposits therein as many eggs as the crevice will conveniently shelter. The favorite situation, however, is beneath the loose bark, her long ovipositor being admirably fitted for depositing eggs in such situations. The eggs adhere to the tree by their own viscidity, and are not covered over by any substance that would protect them from the severity of the weather, but remain throughout the winter in the same condition as when first deposited.

The female lives about five weeks after issuing from the chrysalis. The male is shorter lived than the female, living only about three weeks after issuing from the chrysalis. Neither sex has ever been known to take any nourishment whatever during their lives as moths. The females are very hardy and can withstand a considerable amount of cold. On the fourth day of November, 1879, I found one on the trunk of an Apple-tree; it was alive, although there was snow on the ground at the time, and had been for the past three or four days, and the previous night ice formed in the horse-trough to the depth of about one and a half inches. I have taken them as late as the last week in November. There is but little danger of confounding this species with either the Spring Canker-worm (*Anisopteryx vernata*, Peck), or with the Fall Canker-worm (*Anisopteryx autumnata*, Packard.)

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*Insects Injurious to Vegetation, pg. 473.

From the brief description of the female moth given above it will be seen that she differs widely from those of the two species mentioned above, both of which resemble her in being entirely destitute of wings. The female Fall Canker-worm Moth is of a uniform dark-gray color, unmarked; the legs are ash-gray. The female Spring Canker-worm Moth is of a pale-gray color, marked on the back with a black stripe which is sometimes nearly divided in the middle by a whitish line or a row of whitish spots; the legs are ringed with black and gray. The caterpillars, or worms, differ from each other still more widely than the female moths do. The Fall Canker-worm is provided with twelve legs, one pair of horny texture, under each of the first three segments back of the head, and one pair of soft, fleshy pro-legs under the eighth, ninth and last segments. The Spring and the Yellow Canker-worms are provided with only ten legs, the eighth segment being entirely destitute of legs. The Spring Canker-worm is of a greenish color, marked on each side with four whitish lines; the head is mottled, pale on the top, and marked on the face with two pale lines running crosswise. The Yellow Canker worm, as its name indicates, is of a yellow color, marked on the back with ten black lines; these lines sometimes impart a bluish cast to the ground color, but there is always a stripe of bright yellow beneath the lowest line; the head is yellowish-brown.

MIGRATION OF THE SPECIES.

It sometimes happens that orchards which are situated at some distance from any other orchard, and from shrubs and trees of any kind, will suddenly become infested with these pests. The female moths being wingless, the question natually arises, "How do they migrate from so great a distance?" It is my opinion that these migrations are performed by the male moths during copulation. Being provided with ample wings they could readily transport the females to quite a distance. We frequently see this among the Butterflies, and why may we not look for it among the Moths, especially among those the females of which are wingless.

NATURAL ENEMIES.

The Yellow Canker-worms are preyed upon by quite a number of birds, particularly the Blue-Jay (*Cyanura cristata*), which feeds its young largely upon these and other naked caterpillars. The young worms are preyed upon by the larvæ of the Fifteen-spotted Lady-bird (*Anatis 15-punctata*, Olivier). The Green and the Red spotted Caterpillar hunters (*Calosma scrutator,* Fabricius, and *Calosma calidum,* Fabricius), destroy many of them, especially the former, which I have frequently found climbing about in the tops of the trees in search of them. The Dotted-legged Plant-bug (*Euschistus punctipes,* Say), also feeds upon them, as I have frequently seen it clinging to the underside of a limb with one of these Canker-worms dangling from its beak. Dr. Packard says of the group to which this insect belongs* (*Pentatonidae*) that they are "found on shrubs, sucking the leaves, or often transfixing caterpillars on their beaks and carrying them off to suck their blood at leisure." That such is the case with the above species I have had abundant evidence, as I have frequently found it with its beak inserted into the stems and buds of various plants, and also, as stated above, with a caterpillar dangling from the end of its beak. Such being the case it is difficult to decide whether these insects are beneficial or injurious; but it is a fact that there is scarcely a predaceous insect which, when unable to obtain its accustomed food, will not partake of a vegetable diet.

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*Guide to the Study of Insects, pg. 546.

The only insects which may be regarded as being wholly beneficial, are those parasites which, in their larval state, live within the bodies of caterpillars and other vegetable-feeding larvæ, and which ultimately cause the death of the insects which they infest. They belong to the two orders *Hymenoptera* or wasp-like insects, and *Diptera* or two-winged flies. I am not aware that any parasite belonging to the first named order has ever been known to infest the Yellow Canker-worm. The only parasite known to infest it is the Tachina-fly spoken of above, and which belongs to the Order *Diptera*. The Canker-worms infested by this parasite may usually be distinguished from those not infested, by the white raised spots which are placed on some part of the body, usually on the back near the head, and which, as above stated. are the eggs of this fly. These spots, however, are not always a sure indication that the caterpillar on whose body they are placed is parasitized, as I have on several occasions obtained moths from caterpillars on whose bodies from one to five of these eggs were placed. In such cases the eggs may have been infested by some minute Hymenopterous parasite—probably a Chalcis-fly, as I have sometimes found a circular opening in the upper side of the egg, through which the parasite had evidently escaped; or the eggs may have been unimpregnated. Neither are they a sure indication that the caterpillar is infested with the larva of a Tachina-fly, as I have on three different occasions bred Hymenopterous parasites from caterpillars on whose bodies several of these eggs were placed. I have also had Tachina-flies from caterpillars on whose bodies not one of these eggs could be found. In these instances the eggs had probably been attached to the body of the caterpillar before it moulted, and after moulting, the eggs, being attached only to the skin, were cast off with the latter; but the grubs, or maggots, hatching out before the eggs were cast off, had entered the caterpillar's body.

It is said of those Hymenopterous parasites which live singly within the bodies of caterpillars, that the parent fly can tell whether a caterpillar contains a parasite or not, 'and that she never deposits an egg in a caterpillar whose body already contains a parasite; but this faculty appears to have been denied the Tachina-fly. In fact, she seems to have been endowed with but very little instinct, especially in regard to properly estimating the number of its larvæ which a certain caterpillar will nourish. I have occasionally found caterpillars whose bodies were scarcely large enough to maintain a single Tachina larva, and yet they had five or six Tachina eggs attached to each of them.

To many persons it may seem strange that a caterpillar can live so long after being infested with these parasitic larvæ. It has been frequently stated that these larvæ feed upon the fatty parts of the caterpillar, without injuring any of its vital parts. It is more likely that they obtain their nourishment by absorption through the skin. This is known to be the case with many larvæ which inhabit galls—such as the Hessian-fly (*Cecidomyia destructor*, Say)—and it is very probable that all internal parasites obtain their nourishment in this manner. Their jaws, instead of curving toward each other as do the jaws of other insects, curve downward, and appear to have been designed more for retaining the larva in its place than for mastication.

REMEDIES.

The method usually pursued for exterminating these insects is to destroy the female moths before they have deposited their eggs, or at least to prevent them from depositing them upon the trees. To accomplish this, many patent inventions have been given to the public, but these have usually been too expensive or to difficult of application to bring them into general use. A very simple method, and one quite as effectual as any of these, is to place paper bands around the trunks of the trees and cover them with tar or some other sticky substance. The best paper for this purpose is tarred building paper, such as carpenters sometimes use in siding up a building before the clapboards are nailed on. There are two kinds of this paper; one of a brownish color, resembling pasteboard, the other black. This latter kind is much preferable to the former, and should always be used whenever it can be obtained. It is sold in large rolls, each roll being composed of only one strip, which, when unrolled, is wide enough to be cut into four strips of equal width. From the end of one of these strips cut off a piece long enough to reach around the trunk of the tree and overlap about one inch. Wrap one of these pieces around the trunk, resting the lower edge of the paper upon the ground, and fasten it to the tree with two strong cords, the upper one being tied around the band about one inch below its upper edge, the second one about midway between this one and the surface of the ground. The tar should be applied to the band above the upper cord, and should be renewed before it becomes hard, otherwise the moths will pass over it. If a small quantity of castor oil is mixed with the tar, the latter will not harden so rapidly as it would if pure. Great care should be taken not to have any part of the trunk of the tree below the band exposed to view, the object being to prevent the moths from depositing their eggs upon *any part* of the tree. Should any part of the tree below the paper band be exposed to view, it should be mounded up with earth. In the latitude of Northern Illinois the tar should be applied to the bands about the middle of October, and should be renewed for about six weeks afterward, or until all of the moths—or grubs, as they are commonly but incorrectly called—are destroyed by the cold. In more southern latitudes the moths probably begin to rise earlier in the season, and in such places it will be necessary to apply the tar earlier in the season than the date given above. Should the orchard also be infested with the Spring Cankerworms (*Anisopteryx vernata*, Peck)—the moths of which rise from the ground in the spring—the paper bands should remain on the trees all winter, and the tar be applied to them as early in the spring as the moths begin to appear, which is usually from the first to the middle of March, according to the season. The tar should be renewed for about one month afterward, when the paper bands should be removed from the trees and either burned or thoroughly scalded. in order to destroy any eggs that may have been deposited upon them.

Printers' ink and molasses have been used by some persons in place of tar; others discard the use of paper bands altogether, and in their stead fasten a band of tin around the trunk of the tree. In placing these tin bands around the trunks of the trees, they first pass a piece of rope around the trunk and fasten it by driving a shingle nail through the everlapping ends; a strip of bright tin about four inches wide is then bent around the tree over the rope and fastened by driving a shingle nail through the overlapping ends into the rope, the latter to be in the middle of the tin band. So long as the tin remains bright, this appears to be a very effectual estopper; but as soon as it becomes rusted, the moths will crawl over it.

It has been the custom heretofore of placing the estoppers a short distance below the lower branches of the trees; but this will not prevent the moths from depositing their eggs upon the tree *below* the obstruction, making it necessary either to destroy the eggs before they hatch out—which is no easy matter—or else to prevent the young worms from going above the obstruction, and this latter will be found to be much more difficult than to prevent the ascension of the moths. All this trouble may be obviated by placing the estopper at the base of the trees upon wide paper bands, as recommended above; the moths will then be forced to deposit their eggs upon the paper bands, and as these are to be removed and burned before the eggs hatch out, the latter will all be destroyed. It must not be supposed that the tar will capture and destroy *all* of the moths; many of them, finding themselves unable to get above it, will deposit their eggs below it.

The above method will probably be objected to on the ground of its requiring so much time to apply the tar, as it will be necessary to renew it at least every other day for about one and one-half months. An easier but more dangerous method is to syringe the infested trees with London-purple or ,Paris-green and water. London-purple is to be preferred to Paris-green; being finer than the latter it does not settle so rapidly to the bottom, thus occasioning less frequent stirring. Besides being considerable cheaper, it is also much stronger, requiring only about one-half the quantity that would be required of the Paris-green. It is usually applied at the rate of one-half a pound of the poison to from forty to fifty gallons of water. This is usually showered upon the trees by the use of a garden syringe or a force-pump from a barrel placed on a wagon or other vehicle and driven between two rows of trees; the trees on both sides of the vehicle can then be thoroughly showered in a short time, and with but little labor. The liquid should be thrown upon the trees in as fine a spray as possible, in order that it may settle upon the leaves; for if thrown upon them in streams or large drops, a large quantity of it will be wasted.

This method has the advantage of not only destroying the Canker-worms before they have had time to commit very serious depredations, but it will also destroy all of the other leaf-eating insects which may be found upon the trees. It is also used with very good success in exterminating the well known Apple-worm (*Carpocapsa pomonella*, Linn,) a small, whitish, sixteen-legged caterpillar which lives within apples, Siberian crab-apples, and in various other fruits.

DESCRIPTIVE.

As this insect has not been treated of in any of the former reports of this department, we append herewith a description of it in its various stages:

Hibernia tiliaria—Egg.—Elliptic-ovoid, pale yellowish, covered with fine, sometimes nearly obsolete raised lines which form shallow, hexagonal cells; length, nearly one-twenty-fourth of an inch. (This egg closely resembles that of the Spring Canker-worm Moth [*Anisopteryx vernata*, Peck].)*

Larva.—Body provided with only ten legs; yellow, marked on back with ten black lines, which sometimes impart to the ground color a bluish tinge; the lowest line is wavy, uniting with the one above it on the middle or anterior part of each segment; venter yellowish-white; head yellowish-brown; length, about one inch. The body is sometimes marked with irregular, dusky blotches.

Chrysalis.—Of the normal shape, terminating posteriorly in a slender, black spine, two-pronged at the tip; color, a dark or yellowish-brown; length, from seven to nine-sixteenths of an inch.

Male Moth.—Fore-wings pale brownish or dull yellowish, crossed by two dark-brown bands, one at about one-third the distance from the base to the tip of the wing, the other about midway between this one and the outer margin; in the space between these bands, nearest to the front edge of the wing, is a brown dot; hind-wings somewhat transparent, yellowish-white, sometimes with a brown dot in the center; antennæ pectinate; expands about one and three-fourths inches.

Female Moth.—Wingless; body white, dotted with black, and marked on the back with two rows of black spots, and with a row of smaller black spots low down on each side of the body; legs ringed with black and white; antennæ filliform; length of body, including the head, nearly one-half of an inch.

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* Figured in Riley's Seventh Report, page 80, fig. 14 *b*, and reproduced in his Eighth Report, page 13, fig. 3. Those figured in his Second Report, page 94, fig. 66 *a* and *b*, and reproduced in LeBaron's Second Report, page 99, and also in Thomas' Second Report, page 110, fig. 24, do not belong to this species, but to the Fall Canker-worm Moth (*Anisopteryx antumnata*, Packard.) This latter species—as Prof. Riley pointed out in his Seventh and Eighth Reports—is the one referred to as the *Anisopteryx vernata*, by Dr. Harris, on page 461 of his excellent work on the "Insects Injurious to Vegetation," while the species which he calls *pometaria* is the true *vernata* of Peck.

THE IMPORTED CABBAGE WORM.

(*Pieris rapae*, Linnaeus.)

(Order Lepidoptera. Family Pieridæ.)

[Feeding upon the leaves of the cabbage and a few other plants; a rough sixteen-legged caterpillar, of a bluish-green color, marked on the back with a yellow line and with a row of elongate yellow spots low down on each side of the body on a line with the spiracles.]

Notwithstanding the fact that entomologists in the United States and Canada have devoted much attention to this species for the past ten years, yet it virtually remains master of the situation. Not that no effectual remedies have ever been discovered; but such remedies are found to be either too expensive, too dangerous, or too difficult of application to be universally adopted.

It is claimed that one of the best remedies, if not *the* best, is to dust the infested plants with Insect powder (*Pyrethrum.*) It is usually diluted with flour, at the rate of one ounce of the powder to five ounces of flour, and thinly dusted over the infested plants. Some persons use it in a solution of one ounce of the powder stirred in about ten gallons of water. Either of these mixtures is said to be very fatal, not only to the cabbage worms, but also to almost every other insect that may be upon the plant.

The chief drawback to the use of this substance is its present high price. A variety of this plant is grown in California, under the name of *Buhach*, and the powder made from this plant is said to be as effectual in its action upon insects as the imported article.

Another remedy, which has the advantage over the above of being within the easy reach of all, was highly recommended by several writers the past season. It consists of equal parts of saltpeter and salt, dissolved in hot water and diluted with cold water; this is to be sprinkled upon the infested plants in the hottest part of the day and when the sun is shining upon them. The proportion commonly used is one tablespoonful of saltpeter and an equal quantity of salt dissolved in hot water and diluted with ten or twelve quarts of water; but it is very difficult to give the exact quantity of each to be used on account of the great difference in the strength of the different kinds of saltpeter, some kinds requiring nearly double the amount that would be required of others.

On the 27th of August I sprinkled a cluster of horse-radish leaves, which were badly infested with cabbage worms, with a solution composed of one tablespoonful of saltpeter, an equal quantity of salt dissolved in a cupful of hot water, and diluted with about two quarts of water. The solution was sprinkled on the leaves at about half past nine o'clock in the forenoon, when the sun was shining brightly. At the time of applying the solution there were about a dozen worms of various sizes on the leaves; two days later only two of the worms remained. On some of the leaves were a few quite large spots that had been killed by the solution, but the leaves were not injured to any great extent by it.

On the 12th of the following September I sprinkled another cluster of horse-radish leaves, which were badly infested with these worms, with a solution composed of about one-fourth of a tablespoonful of the same kind of saltpeter as that used above, and an equal quantity of salt, dissolved in hot water and diluted with about one quart of cold water. This was applied at about half past eleven o'clock in the forenoon, while the sun was shining brightly. It apparently had but little effect upon the worms, except on a few of the younger ones.

From this it would appear that in order to be perfectly effectual, it would be necessary to make the solution so strong that it would injure the plants upon which it was sprinkled, unless it be that the plants are hardier than the horse radish; and this, like most other remedies, will be more fatal to the young worms than it will be to those more advanced.

Several writers recommend the use of hot water for destroying these worms; but the following experiments which I made with it last year do not prove it to be very desirable.

On the 14th of May I made a number of experiments, with a view of ascertaining the number of degrees to which water could be heated and be applied to plants without injuring them. The day on which these experiments were made was cloudy, the sun shone occasionally, and the thermometer placed where both the sun and wind could strike it, indicated a temperature of 68° Fahrenheit. The plants experimented upon were dandelion, horse-radish and tame cherry, and the water was applied to the same plant only once.

At 130° the water did not affect any of the plants. At 140° dandelion was slightly affected, but horse-radish and cherry were not perceptibly injured. At 150° dandelion was killed, and horse-radish and cherry slightly injured. At 160° horse-radish was killed, and cherry was killed in spots. At 170° all of the plants were killed, the leaves withering sooner than at 160°.

It will be thus seen that water cannot be heated above 140° and be applied to plants like the dandelion without injuring them, while on plants as hardy as the tame cherry the water may be heated to 150° and be applied to them without injuring them, but it is not likely that they would stand a greater degree of heat than this.

On the 2d of the following June I made a number of experiments for the purpose of ascertaining the number of degrees below 140° that water could be heated and be applied to caterpillars and destroy them. The species experimented upon were Yellow Canker-worms (*Hibernia tiliaria*, Harris). They were placed on a wire screen so that the water could not collect around them, and the water was applied to the same lot of worms only once; the latter were kept out of the direct rays of the sun. The water was heated to 100°, 110°, and so on up to 140°.

At 130° it was applied to twelve of the worms, and at 140° to ten; but it did not kill any of them, as they were all alive the second day after making the experiments. As soon as the water touched the worms of the latter lot they squirmed around considerably, and had the water been heated to 150° it would very probably have proved fatal to them, but it would have injured the plants, except such as were hardier than the plants which I experimented upon.

A more effectual remedy than this, but one that we are slow to recommend, is to dust the infested plants with a mixture of Paris green or London purple and fine road dust. This remedy is strongly recommended by a prominent market-gardener of Danville, Illinois, who, in a communication to the Germantown *Telegraph*, of July the 13th, 1881, after referring at some length to the question of a remedy for the Cabbage worms, says:

"We tried every remedy known and unknown, but without avail. Our cabbages would be defoliated in spite of them. But our attention has been called to a new means for their destruction, which has proved a perfect success when intelligently applied. We give it to you with some hesitation, knowing the popular fear that may arise from its use. But we have no hesitation now to declare it perfectly innocent to health, after using the vegetable freely on our tables, and finding no complaints from the quantities we have marketed. Our remedy is the assenated lime, commonly known as *London Purple*. This strange substance is the residuum from the great stills of the manufacturing chemists, in obtaining analine dyes from coal-tar, and contains a small amount of arsenous acid with a large quantity of silicate of lime and coloring matter of a beautiful rich purple—the rich purple which is now superseding graphite in the manufacture of pencils. We mix this substance with any fine dry dust, the finer the better. Dust from clayey roads is excellent. We proportion about one-fourth pound of purple to twenty-five pounds of dust, and to more thoroughly incorporate it, pass it all through a meal sieve. We have now our remedy. We take a still day when the plants are perfectly dry. We carry a dish of the dust in our left hand and dash a pinch of it in the heart of the plant with our right. The air being so still and the dust so fine, it will fog through all the convolutions and folds of the leaves, settling on the soft, clammy bodies of the larvæ, and in the course of ten or fifteen hours they give up the ghost. Two or three applications in a season are sufficient. The materials will wash away by rains, and the plant, unfolding from its center, brings on new growth, so that no more fear may be apprehended in using it than on potatoes. On the latter we use it in the same way, *doubling the strength*, and apply when the dew is on the vines. The larvæ of the Colorado beetle are easily killed this way, and more effectually than by water mixtures. A. R."

Many persons, no doubt, will object to applying so poisonous a substance direct to the heads of the cabbages. This may be modified somewhat by surrounding the cabbage patch with a small strip of some kind of plant other than the cabbages upon which the worms feed; and as soon as the worms appear upon the plants in this strip, to dust the latter with the poison. I contributed the following article on this subject to the Iowa HOMESTEAD, and it appeared in the issue of April 22, 1881. This article, after giving several remedies, closes as follows:

"Market-gardeners, who grow an acre or more of cabbages every season, find that the worms are much more abundant on the plants in the outer rows than they are on those which grow in the center of the field. Upon this principle, if a few rows of some kind of plant on which these worms feed, other than the cabbage, were planted around the field, the butterflies—the parents of the worms—would deposit their eggs upon these, instead of consigning them to the cabbages. Besides the Cabbage, I have found these worms feeding upon the Radish, Rutabaga, Horse-radish and Mustard. The last mentioned plant would probably be better than any of the others for a border to a cabbage field; the seed should be sown very early and not too thickly, so that the plants will have attained a considerable size when the cabbage plants are ready to be set out. As soon as the worms appear upon the mustard the latter should be sprinkled with Paris-green or London-purple and water, using about two tablespoonfuls of the former, or one of the latter, to two gallons of water; and this should be continued throughout the season. If Rutabagas are to be grown, these should be placed next to the mustard, and if the worms appear upon them in destructive numbers, they may be sprinkled with the poisonous solution without any injury to their roots. The early Cabbages should be placed next to the Rutabagas, thus bringing the later sorts in the center of the field. By this arrangement the worms will mostly be confined to the Mustard and Rutabagas; and if any find their way to the early Cabbages, the latter, by their rapid growth, will be more likely to withstand their attacks than the later kinds would. The cabbage-field, if possible, should be perfectly square; that is, it should be as wide as it is long. The only drawback to growing Mustard for this purpose is that when it once gets a foothold in the soil it is sometimes very difficult to eradicate. In this locality the Black Mustard (*Brassica nigra*) has become firmly established on a few farms, and the owners find it almost impossible to eradicate it. Whether the White Mustard (*Brassica alba*) has the same quality or not, I can not say; but if it has not, then it should be used instead of the Black."

The little parasite—*Pteromaluspu parium*, Linnæus—very materially assists us in lessening the numbers of these Cabbage Worms.

It has been a disputed point with Entomologists as to whether this parasite deposits its eggs in the body of the worm or in the chrysalis. The only recorded observation upon this subject that has come to my notice is that made by Mr. Saunders, as detailed in Prof. Thomas' Fourth Report.* This writer states that he saw the little parasite strike the worm with the tip of her abdomen, apparently for the purpose of depositing her eggs under its skin.

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*Ninth Report of the State Entomologist, etc., p. 18.

At several different times during the past season (1881) I saw a few of these parasites quietly resting upon the back of a Cabbage Worm which had suspended itself prior to assuming the chrysalis form; but at such times I never saw any of them make any attempt at depositing eggs. After the worm had cast its skin, however, and the chrysalis is yet soft, I have, on two or three occasions, seen one of the parasites bend the tip of her abdomen downward until it pressed against the chrysalis, and hold it there for a few moments, apparently for the purpose of depositing her eggs in the chrysalis. The part of the chrysalis which the parasite usually selects for depositing her eggs into, is one of the wing-cases, although she sometimes consigns them to the back of the abdomen.

On the 13th of September I saw several of these parasites issue from a chrysalis. The sexes emerged from two different holes in the chrysalis; the large, dark-colored females issued from a hole in the right wing-case, while the smaller but brighter-colored males issued from a hole in the back of the abdomen. Coition took place immediately after they had issued, and lasted about ten seconds, after which the females flew away, but the males remained, looking out for another victim. The copulating orifice of the female, instead of being at the tip of the abdomen, as it is in most insects, is situated in the middle of the under side of the abdomen.

I have never met with the Purple Cabbage Worm (*Pionea rimosalis*, Guenee,) which Prof. Thomas found feeding upon his cabbages, and which he gives an account of in his Fourth Report.* The past season a closely allied species—the *Pionea stramentalis* of Hubner—appeared in considerable numbers upon the Horse-radish in this vicinity. As almost every insect which feeds upon this plant will also feed upon the cabbage, it is very probable that this insect will also be found to feed upon this vegetable; and for this reason I have thought it best to insert a brief account of it in this place. The worms referred to above are provided with sixteen legs, and are marked as follows: There is a yellow stripe on a line with the spiracles, and below this stripe the body is pale-green; above this stripe the body is pale greenish-purple, and is marked on the back with two broken white lines; the piliferous or raised spots are of a polished black color, and are usually marked at the base with a white spot on the upper and lower side of each; the head is polished black, the cervical shield is greenish, and is marked with black on each outer edge; the spiracles are wholly black.

When fully grown, these worms measure about three-fourths of an inch in length. Should they ever become destructive to the Cabbage, they may be known as the *Black-headed Cabbage-worms*.

From the description of the Purple Cabbage-worm given by Prof. Thomas in the report referred to above, it will be seen that this worm differs from those described above, by having that part of the body which is above the stigmatal yellow lines of a purplish-brown, instead of a greenish-purple color, and the head, instead of being polished black, is there stated to be greenish-yellow. In other respects, these two species approach each other very closely. When about to pupate, the Black-headed Cabbage-worm crawls beneath the leaves and other litter which lays upon the ground, and spins a tough cocoon.

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*Ninth Annual Report of the State Entomologist of Illinois, page 37.

There are two broods of these worms produced in one season; those of the first brood reach their full size by the middle of July, and, after spinning their cocoons and assuming the chrysalis form, are changed to moths in the latter part of the following month; while those of the second brood attain their full size in the latter part of October, and are not changed to moths until the following spring. These worms appear to be very social in their habits, and mostly live on the under side of the leaves, sometimes beneath a loose web. When jarred from their perch they hang suspended in the air by a silken thread, as the Canker-worms and a few other kinds of insects are known to do.

I have never had the moths which were produced from these worms determined, but suppose they were rightly referred by Prof. Lintner, in his Entomological Contributions, No. III.*

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* Printed in the "Twenty-sixth Annual Report of the New York State Museum of Natural History," page 164, where this species is placed in the genus *Mesographe* of Hubner.

THE CELERY WORM.

(*Plusia simplex*, Guenee.)

(Order LEPIDOPTERA. Family NOCTUIDÆ.)

[Feeding upon Celery, Lettuce and a few other plants; a naked green span-worm, whose body is marked with eight white lines, and is provided with only twelve legs.]

On the 21st of November I received from the editor of the Germantown *Telegraph* a box of insects for determination. On the wrapper in which the box was sent was written the words "Celery-worms," and in the letter which accompanied the box the Editor stated that the worms he sent me were very destructive to Celery in many gardens in his locality.

The above worms agreed precisely with the description of the larva of the *Plusia simplex* of Guenee that I bred a few years ago. This description is as follows:

The body is very robust posteriorly, from whence it tapers to the head. It is of a pale, translucent green color, and is marked with a dark line on the back, on each side of which are three white lines, the middle one the largest; on a line with the spiracles is a white line, and above it is a dark green stripe, darker than the ground color above it. The piliferous spots are either green or white, and are sometimes tipped with black. Below the stigmatal white line the body is dark green. The spiracles are white and are ringed with black. The head is green, and is unmarked except by the black eyelets. When fully grown this larva measures about one and one-fourth inches in length.

In the first stage, or that immediately succeeding the egg, the second white line, (counting from the middle of the back) is wanting, and in the hibernating worms, which we found early in the Spring, all of the white lines except the two stigmatal are usually wanting.

I have never seen a specimen of the Cabbage Plusia (*Plusia brassica*, Riley), at least not to know it; according to the description of it given in Riley's Second Report* it must resemble the Celery worm very closely. Prof. Riley's description of the Cabbage Plusia is as follows:

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*Second Annual Report on the Noxious and Beneficial Insects of the State of Missouri; page 111.

"Pale yellowish translucent green, the dorsum made lighter and less transparent by longitudinal opaque lines of a whitish-green: these consist each side of a rather dark vesicular dorsal line, and of two very fine light lines, with an intermediate broad one. Tapers gradually from segment 1–10, descending abruptly from 11 to extremity. Piliferous spots white, giving rise to hairs, sometimes black, sometimes light colored; and laterally a few scattering white specks in addition to these spots. A rather indistinct narrow, pale stigmatal line, with a darker shade above it. Head and legs translucent yellowish-green, the head having five minute black eyelets each side, which are not readily noticed with the naked eye. Some specimens are of a beautiful emerald green, and lack entirely the pale longitudinal lines. Described from numerous specimens."

From this it will be seen that these two worms resemble each other very closely, and the only character that I am able to point out by which the one may be distinguished from the other is the black ring, or annulation, around the spiracles of the Celery-worm, this ring not occurring in the Cabbage Plusia, at least Riley makes no mention of it, and in comparing the Cabbage Plusia with an allied species, he says:

"There is another worm which may be known as the Thistle Plusia, and which occurs on our common thistles, and cannot therefore be considered very injurious. It differs only from that of the Cabbage Plusia in having the sides of the head, the thoracic legs, a row of spots above the lateral light line, and a ring around the breathing pores, black. I have bred from it the *Plusia precationis* of Guenee—an insect whose larval history has not hitherto been known."

It would appear from this that the spiracles, or breathing pores, of the Cabbage Plusia are not ringed with black. I have also bred the Thistle Plusia, and my specimens did not differ from those bred by Prof. Riley, except in lacking the row of black spots above the lateral or stigmatal light line.

On the 17th of May, 1880, I enclosed a female Celery-worm Moth in one of my breeding cages in which some grass, clover and plantain were growing. In the afternoon of the next day she laid about fifty eggs, placing them singly or in small rows, or patches, on both the upper and under sides of the grass and plantain leaves, seldom placing more than four eggs in one cluster. Shortly after hatching, the larva ate the parenchyma of the blades of grass, leaving the veins untouched; after increasing somewhat in size they fed upon the plantain leaves.

The first larva of this brood began spinning its cocoon on the evening of June the 16th; it became a chrysalis June the 19th, and was changed to a moth on the 28th of the same month. The chrysalis could easily be seen through the thin cocoon.

When this larva began to spin its cocoon the other larvæ hatched out at about the same time, and reared under precisely similar conditions, were of all sizes from those only one-half grown to those nearly full grown. As they appeared to be costive, I supposed that it was caused by a lack of water; accordingly I wet a few leaves and fed them to the larvæ. Shortly after this they were taken with a violent scouring, which so reduced them that all but one died; this one went on to a chrysalis, but died before producing the moth. On the 6th of the following July, I obtained another laying of eggs, and the larvæ from these showed the same variation in size as those of the first brood. When some of them became nearly full grown they were attacked with a disease which caused them, in a short time after death, to turn black; if handled the skin readily broke, showing the interior to be filled with a blackish liquid. As soon as the disease made its appearance, I removed the larvæ to new breeding cages, but without avail, as they all finally died of this disease.

In giving an account of these worms in the Canadian Entomologist* I referred them to *precationis* instead of the *simplex*. This was owing to the fact that the moths from which I obtained eggs had the silvery mark near the center of the fore-wings, nearly as they are in a *precationis* moth which Prof. Grote determined for me a few years ago. I have been able the present season to correct my mistake by the use of the excellent description of these moths which Prof. Thomas gave in his Fourth Report.† These descriptions are as follows:

"*Plusia precationis*, Guenee. The wings and thorax of a deep purplish-brown color. The inner transverse line, which marks the division between the basal and middle area, is formed by a slender thread of golden scales, obliterated toward the costal margin, the outer transverse line indicated by a narrow purplish shading, with a strong forward bend opposite the outer metallic spot; the fringe, which is pale lilac, is preceded by a very slender pale inner, then by an outer black marginal line, and is interspersed with black; the darkest portions of the wings are the space around the metallic spots and the interior portion of the outer area (considering the wings as spread). The metallic spots have more of a golden hue than those of the species heretofore described, they are also distinctly separated and prominent; the outer or posterior, ovoid, the the inner or anterior, when seen from the base of the wing, resembles an interrogation point (?), but seen from behind, when the wings are spread, resembles an Italic *v*, the open part turning forward and inward. The posterior wings dark uniform fuscous, with a coppery luster. Underside dull ochreous, somewhat dusky; the posterior pair crossed by three fuscous lines, two of which are partially visible on the anterior wings. The anterior part of the collar a bright red. Expanse, 1.50 inches."

"*Plusia simplex*, Guen. Front-wings with apical angle well defined; anal angle somewhat dentate; general color grayish-brown; middle space behind the metallic spot dark brown; the inner or basal space, and anterior portion of the middle space, dark ash-color, with a slight purplish tint, sprinkled with black points; the interior transverse line which separates the basal and middle areas, a very oblique, straight, narrow, silvery line, which runs from the posterior margin of the wings to the inner point of the metallic spot, where it stops; the outer transverse line slightly waving or somewhat crenate, and not very distinct, the outer space of two shades, the inner portion darkest and brownish ash-color, but somewhat paler than the middle area, its outer margin tolerably well defined; marginal portions paler ash-color; fringe concolorous, with brown dots at the tips of the veins; metallic spot single, silvery, narrow, and shaped like an Italic *Y*, that is, an oval dot with the inner end prolonged in two arms to the nerve. Posterior wings dark fuscous, with a broad, pale, ocherous curved band across the middle, and a pale orbicular spot on inner portion near the band; fringe pale, with brown points. Underside bronze, somewhat fuscous, with a distinct brownish band across both wings. Head very small; it and the thorax gray.

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*Vol. XIII, No. 2, pages 21-23.

†Ninth Annual Report of the State Entomologist of Illinois, pages 47 and 48.

"Expanse, 1.40-1.50 inches.

"I have two specimens that appear to belong to *precationis*, with the silvery spot precisely as in *simplex*."

Simplex may easily be distinguished from what may be called the *Y* variety of *precationis*, not only in the different shades of its colors, but also by the transverse anterior line, or the one that separates the basal from the middle area. In *simplex* this is straight, while in precationis it is wavy, with a downward curve about midway between the silvery spot and the hind edge of the wing. In *simplex* the silvery spot is considerably larger than it is in *precationis*, as in the latter it is greatly indented on its upper side; and when this indenture is extended so as to divide the silvery spot into two parts, the latter then has the form in which it appears in what may be called (?) variety of *precationis*.

In this latter variety the silvery marks quite closely resemble those found on the fore-wings of the Cabbage Plusia Moth. Prof. Thomas, in his report referred to above, describes this moth as follows:

"Expanse of the wings, 1.25 to 1.50 inches. Front wings narrow and wedge-shaped, as is usual in this group; of a dark, grayish-brown color, a pale spot near the base between the prominent veins; near the middle two small silvery-white spots, the inner one, which is the larger, of an irregular *U* shape, with the opening forward, the interior space usually marked with a slender fulvous line; the outer one, close to the base of the former, and sometimes connected with it, is round or oval in form. These spots are usually very distinct, and bright silvery color, but occasionally are dull, and sometimes scarcely distinguishable, but seldom, if ever, entirely wanting in both wings. Usually a scarcely distinguishable band, slightly paler than the ground color, crosses the wing towards its outer margin; the fringe of the outer margin is of the same color as the wings, and is dentated. Hind-wings smoky, with a coppery luster, darkest towards the outer margin; fringe pale or whitish, with darker inner line. Underside smoky, that of the front wings darkest, with a pearly, varying on the hind-wings to a slightly coppery lustre. The thorax dark grayish-brown; abdomen more or less fulvous; that of the male with a very distinct tuft of bright fulvous or yellowish hair on each side of the fifth segment, folding over the back of the following segments."

From the descriptions which I have given above of these three moths, there need be no danger of confounding them.

By comparing the moth from which I obtained the first laying of eggs with the *simplex* moth which I captured, and the *Y* variety of the *precationis* moth determined for me by Prof. Grote, I find that it is readily referable to the first named species. The Celery Worm, Cabbage Plusia and Thistle Plusia are the only larvæ belonging to the genus *Plusia* that I have ever bred or seen a description of. As stated above, the Celery Worm differs from the Cabbage Plusia only by the black rings around its breathing pores; and both of these worms differ from the Thistle Plusia by lacking the black stripes on each side of the head.

On the 23d of April I found a Thistle Plusia which spun its cocoon the next day, and was changed to a moth on the 20th of May; another spun its cocoon on the 26th of June and produced the moth on the 9th of July.

On the 18th of May I obtained a laying of eggs from a Celery Worm moth; these eggs hatched out on the 24th, and one of the worms spun its cocoon on the 16th of June and was changed to a moth on the 28th of the same month. On the 6th of July I obtained another laying of eggs; these hatched out on the 10th, and the last worm died August 12th, nearly full grown. I have found other specimens of Celery Worms as follows: One June 21st about two-thirds grown; one nearly full grown July 2, and another August 2, also nearly full grown. Those received from the Germantown *Telegraph* November 21 were about one-half grown.

From the above dates it would appear that there are three broods of Celery Worms produced in one season. The first broods issue from the eggs in the latter part of May, and attain their full size in the latter part of June or early in July. The second brood appear from the first half of July to about the middle of September. The third brood issue from the eggs in the fore part of October, and becomes about one-half grown by the time that winter sets in, when they hibernate and finish their growth in the following spring, attaining their full size in the latter part of April. And thus the cycle is completed, giving us three broods in each season, and showing that these insects hibernate as half-grown worms, or larvæ.

This, at least, is the history of these insects in this locality, although it is very probable that one or more additional broods are produced in one season in more southern latitudes.

The eggs of the Celery Worm moth are of a milky-white color, flattened, globular, or turnip-shaped, sometimes with an impressed spot in the center of the upper side; the upper half of the egg is grooved vertically; the grooves are narrow, and the spaces between them are roughened. The transverse diameter is about one-sixtieth of an inch.

REMEDIES.

The Plusia larvæ are the most delicate of any larvæ that I have ever bred; out of a hundred or so that I have had in my breeding cages, not more than one in ten ever lived to produce moths.

In a former part of this article I gave an account of the disastrous effect that wet food had upon a brood of Celery Worms which I had reared from the eggs. From this it would appear that if the plants which are infested with these worms were sprinkled occasionally—say two or three times a day—with cold water, that this of itself would be sufficient to destroy the worms.

THE CORN MYRIAPOD.

(*Julus Impressus*, Say.)

(Order CHILOGNATHA. Family JULIADÆ.)

[Feeding upon the kernels of Corn on ears which lay upon the ground; a brown, nearly cylindrical, thousand-legged worm.]

Almost every person is familiar with the brown "thousand-legged" worms which are frequently found beneath boards and in other moist situations. They belong to the same branch (*Articulata*) as insects, but to a different class (*Myriapoda*), and are commonly placed between the lobsters (*Crustacea*) and the legless worms (*Vermes*). They do not pass though a quiet pupa state as many insects do, but remain active from the time they issue from the eggs until they die of old age, or some other cause.

The young do not cast their skins as insects do in their adolescent stages, but increase in size by the formation of additional segments; and thus the adult Myriapod always has a greater number of segments than the young.

The Myriapods—or "thousand-legged worms," as they are sometimes called—are readily divisible into two groups, the first containing those having only one pair of legs to each segment, the second those having two pairs. This difference is of great economic importance, enabling us to separate at a glance the injurious ones from the beneficial, as it has been ascertained that those which have but one pair of legs to each segment are predaceous, feeding upon insects and other animals, and are hence beneficial; while those having two pairs of legs to each segment are vegetable feeders, and hence injurious.

Had the Great Creator followed a similar plan in the structure of insects it would have saved a great amount of study and labor.

The Myriapods belonging to the two groups mentioned above differ from each other in their mode of development only in the fact that in those which feed upon vegetable matter the new segments are formed between the last segment and the one next to it, while in the predaceous group the new segments are formed between any two segments.

Besides the Flattened Centipede (*Polydesmus complanatus*, Linnaeus), which Dr. Fitch found in a situation where the evidence was pretty strong that it had been feeding upon a green cucumber.* I am not aware that any of the Myriapods have been reported as being injurious to any vegetable of economic importance.

A few years ago I found on several different occasions a long, nearly cylindrical Myriapod feeding upon the kernels of corn on ears that lay upon the ground. As it is so difficult to distinguish this Myriapod from the many closely allied species which inhabit this State, I will not attempt to describe it. It will be sufficient to say that it measures nearly two inches in length, is of a deep brown color and its form is nearly cylindrical. It is frequently met with beneath shocks of corn and other grain. When disturbed it coils its body in the form of the hair-spring of a watch. As it is the only species known to me to feed upon corn, I have named it the *Corn Myriapod.*

As a certain amount of moisture is necessary for its existence, it is not probable that it will ever become very destructive to corn, except in cases where a large proportion of the ears lay upon the ground, such as that which has been wintered over in the field, and the best remedy to be used against them in such cases is— to husk the corn at the proper time (in the fall of the year), and thus have the ground in readiness for seeding early in the following spring.

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*See his Fourth Report, page 27.

THE IMPORTED CURRANT WORM.

(*Nematus ventricosus*, Klug.)

(Order HYMENOPTERA. Family TENTHREDINIDÆ.)

[Feeding upon the leaves of the Currant; a false Caterpillar of a greenish color, marked with numerous raised black spots, and provided with twenty legs.]

This insect was imported into this country about the year 1858, being first seen in the vicinity of Toronto, Canada, and shortly afterwards it made its appearance in the vicinity of Rochester, New York. Like a great many other imported insects, it is much more injurious than any native species having similar habits. I first observed it in this locality in the year 1880, when it appeared in a few gardens in limited numbers. The present season (1881) it appeared in immense numbers, utterly defoliating the currant bushes in many gardens. It appears to be very local in its habits, as I have known it to occur upon the bushes in certain gardens in sufficient numbers to entirely defoliate them, while the bushes growing just across the road were not infested by it.

These worms when fully grown measure a little over three-fourths of an inch in length, are of a greenish color, and the fore and hind parts of the body are usually tinged with yellow; up to the last moult the body is thickly covered with raised black spots, and on each side of the body are about ten raised black spots which are larger than any of the others; on the posterior end of the last segment is a large black spot and two black prickles; the head is polished black. At the last moult or casting of the skin the body is of a uniform greenish color, being entirely destitute of the raised black spots with which it was covered in its earlier stages. The body is provided with twenty legs, six of which are of a hard, bony texture, and are placed beneath the first three segments back of the head; the other legs are soft and fleshy, and are placed in pairs beneath the remaining segments; one pair to each segment, except the fourth and eleventh segments, which are entirely destitute of legs. When first hatched the young worms eat small holes in the leaves, working mostly from the underside. After increasing somewhat in size they feed from the edge of the leaf and usually devour the entire leaf, leaving nothing but the larger veins or ribs. When at rest they usually hold fast to the edge of the leaf by the three pairs of thoracic legs, coiling the body in a spiral form on the underside of the leaf.

There are usually two broods of these worms produced in one season, and although these broods sometimes overlap each other, so that specimens may be found at almost any time from the first of June to the first of August, yet there is usually a brief interval in the latter part of June when very few of the worms are to be found. When fully grown they crawl beneath the leaves and other litter, and each one spins a tough, brown elliptical cocoon. Some of the worms of the first brood assume the chrysalis form soon after spinning their cocoons, and are changed to flies in from two to four weeks later. The other worms of this brood, and all of those of the second brood, pass the winter in the larva or pupa state, and are changed to flies in the month of April or May of the following year.

The female fly is of a light yellow color, marked on the head and thorax with black; her wings are transparent and expand about five-eighths of an inch.

The male fly differs so much from the female in color and general appearance that it might easily be supposed that he belonged to a different species. His body is black and the abdomen is usually ringed with pale yellow; the tip of the abdomen is also of this color.

The first fly of this species which I captured the present season was a male, and was taken May the 9th; about the 23d of this month three females were captured, one while in the very act of depositing her eggs upon a currant leaf. The eggs are placed on the underside of the leaf, on the larger veins, the female fly first rasping off the skin, or epidermis, from the veins before attaching her eggs to them. The eggs hatch out in a few days, and the worms attain their full size by about the middle of June, when they desert the bushes and spin their cocoons beneath the leaves and other litter that lays upon the ground. By the twentieth of June scarcely one of these worms was to be found where, but a short time before, the bushes literally swarmed with them. In the course of a week or two another brood of worms appeared, and these reached their full growth toward the end of July, when they deserted the bushes and spun their cocoons as the first brood had done. This was the last brood that appeared, although Prof. Riley says* that a third brood is sometimes produced.

On the 16th of June of the present year (1881), I enclosed about a dozen of these currant worms in one of my breeding cages; two days later some of them began spinning their cocoons, and by the twentieth of this month all had inclosed themselves in their cocoons. The first fly issued July 4; another issued a few days later, and a third put in its appearance on the twentieth of this month. This was the last fly that issued, and on the 12th of August I opened one of the cocoons and found it to contain a living larva. Here then was an individual of the first brood still in the larva state, while those of the second brood had deserted the bushes and spun their cocoons at least two weeks previously. It would be interesting to investigate this case and ascertain by what law some of the worms are changed to flies in a few days, while others, hatched out at about the same time, and probably from the same laying of eggs, and subject to precisely the same influences, are not changed to flies until after the lapse of many *months*. Have these insects the power of remaining in the larva state for as long as they desire to? and can they change themselves from this state to one of the succeeding changes whenever they desire to do so? We are forced to acknowledge our ignorance of this subject, and to content ourself with unraveling the less intricate problems of the Creator.

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* Ninth Annual Report, etc., page 11.

The remaining cocoons were not disturbed until the 29th of September, when I opened each of them and found them to contain only dead flies and larvæ; the latter had probably died for want of moisture, as they were kept in a wooden box on a shelf under an open woodshed. Had they lived they would probably have been changed to chrysalids before winter set in, and would have hibernated in this stage, producing the flies in the month of April or May of the following year. No chrysalids were found in any of the cocoons.

THE ARMY WORM.

(BY D. W. COQUILLET.)

(*Leucania unipuncta,* Haworth.)

(Order LEPIDOPTERA. Family NOCTUIDÆ.)

[Hidden beneath boards, clots of earth, etc., or marching in large companies; a naked sixteen-legged caterpillar, whose body is marked with lines and stripes of white, yellow, brown and greenish ash; usually most destructive to fields of oats and timothy.]

The Army Worm has been treated of so frequently that a full account of it in this place would be superfluous; instead, then, of going into details concerning its life-history, I will content myself with merely giving a few facts which have come under my notice, chiefly during the past season (1881).

Previous to this year I had reared only one of these insects to the perfect state. In the year 1876 I obtained an Army Worm from some earth that had just been thrown out of a shallow ditch. It pupated on the 9th of July and disclosed the perfect insect eleven days later.

On the 14th of July of the present year (1881) I found an Army Worm nearly full grown, hidden at the base of one of the upper leaves of a stalk of corn; this stalk was a small one, and the hiding place of the worm was about one foot from the ground. Six days later I found another Army Worm in a similar situation, and toward the evening of the same day I found a third in the very act of devouring the undeveloped terminal leaves of a stalk of corn which measured about two and one-half feet in height. The presence of these worms could readily be detected, not only by the large holes which had been eaten in the leaves, but also by the large excrements that had collected at the base of the leaves. The Army Worm taken July 14 pupated four days later and was changed to a moth on the third of the following month (August). The other two worms were not reared to the perfect state, but as they agreed very well with the description which I took of the above specimen, I have no doubt that they belonged to the same species.

In the afternoon of July 18th a farmer who had commenced to cut a field of Hungarian grass containing about two acres, informed me that it was badly infested with cut-worms. Repairing to the field I found that, in the main, he was correct, but the infesting insects were not cut-worms, but were genuine Army Worms. They were most abundant beneath the lodged grass which lay flat upon the ground, and here there was frequently one worm to every square inch of the surface. They were of all sizes, from five-eighths of an inch long to nearly full grown, but the greater number were nearly full grown. I examined the Hungarian grass, which had not yet been cut down, but did not find any of the worms feeding, neither could I perceive that they had injured the grass to any great extent, and the owner of the field was also of the same opinion. They had probably fed upon the lower leaves, and as they usually die and wither up before the grass is cut, their absence would not be noticed. The examination was made while the sun was shining brightly, and as these worms are loth to move about at such times it is not at all strange that I did not find any of them feeding at the time of my visit. All of the grass in this field was cut down on the same day that I made the above examination, so that further observations on the worms in the standing grass could not be made.

This field is situated in the extreme southern end of a forty-acre pasture lot. In the southern end of this lot are about ten acres of cleared land; the remaining portion of the lot is quite thickly covered with trees. The land immediately adjoining the Hungarian field on the north is kept pastured off quite closely throughout the entire growing season.

Adjoining this field on the east, and separated from it only by a narrow lane, is a field of tilled land eight or ten rods in width, and extending northward twenty or thirty rods beyond the north side of the Hungarian field. This field has been planted to corn for several years past. On the east of this field is a wide lane, through which a small creek flows. This lane is kept pastured off quite closely during the growing season. This lane is bordered on the east by a garden patch about four rods square, and north and east of this is a field which extends eastward about twenty rods, and about an equal distance northward. In the summer of 1880 this field was plowed for the first time and was afterward sown to buckwheat; the present season it was planted to cucumbers and turnips. Bordering on the north end of this field is a strip of wet meadow land six or seven rods wide, which, during the greater part of the year, is covered with a rank growth of wild grass. On the south side of the Hungarian field is a public road, and south of this is a field which extends southward thirty or forty rods. The western edge of this field is about on a line with the west end of the Hungarian field, but the field extends eastward five or six rods beyond the eastern end of the Hungarian field. This field was seeded to timothy several years ago; last spring it was plowed up and planted to corn. To the east of this field is the farmer's barnyard, barn, granaries, and other outbuildings, and to the east and south of these is a small orchard seeded to timothy.

On the west side of the Hungarian field is also a public road, and west of this is a large field extending westward thirty or forty rods, and northward from a point a short distance south of the southern border of the Hungarian field to twenty or more rods north of this field. The above field was planted to corn last year, and the present season it was sown to oats. Bordering on the southeastern corner of this field, and just across the road from the Hungarian field, is a small piece of wet land containing less than half an acre, which is covered with a rank growth of wild grass; and to the south of this is a large pasture lot, which extends southward a distance of about thirty rods, and westward the entire length of the oat-field described above; this lot is kept pastured off quite closely throughout the growing season.

I have been thus particular in giving the location and surroundings of the infested field because certain writers maintain that the Army Worms originate in wet meadows and migrate to the uplands. From the surroundings of the fields as given above it will readily be seen that this could not very well have been the case in this instance. The only meadow of this description in the immediate vicinity of the Hungarian field is the one across the road from the southwestern corner of this field, and contains less than half an acre; but had the worms originated in this meadow they would most likely have migrated into the adjoining oat-field, they having a great predilection for this cereal. Moreover, the worms were most abundant in the *eastern* end of the field, and no traces could be found in the western part of the field to indicate that the worms had ever been in this part of the field. The only wet meadow in the vicinity of the eastern end is the one situated north of the cucumber and turnip field; this meadow is thirty or forty rods northeast of the eastern end of the Hungarian field, and contains about two acres. But had the worms originated in this mdadow it would have been necessary for them to cross a small creek, which contains water during a greater part of the season; and in marching this distance they would most likely have left behind some trace of their passage.

Last season the northern one-half of the Hungarian field was planted to potatoes, and the southern one-half to cucumbers. The latter one-half was plowed the present season but a short time before the Hungarian seed was sown; but the northern one-half was merely harrowed. The Hungarian seed was sown about the middle of May.

In company with the Army Worms were a great many Spotted Cut-worms (*Agrotis C.-nigrum*, Linn.); they were of different sizes, but were mostly nearly full-grown. There was at least one of these Cut-worms to every eight or ten Army Worms. I did not rear any of them to the perfect state, but they agreed very well with the description which I took of a number that I bred a few years ago, and which is as follows:

Body mottled brownish-ash, sometimes tinged with green; eleventh segment slightly humped; a light-colored medio-dorsal line, and a similar sub-dorsal line—situated about midway between the first mentioned line and the spiracles; this line is sometimes wanting; below the spiracles is a light colored stripe; on each dorsal space—

the spaces between the medio-dorsal and sub-dorsal lines—is a row of oblique black spots, one spot to each segment, and most distinct on the posterior part of the body; the two spots on one segment are sometimes joined together at their posterior ends, forming a semi-circle; piliferous spots sub-obsolete, black; spiracles white, ringed with black; venter, or under part of the body, pale-greenish, usually with a light colored line in the middle; head yellowish-brown, marked with two curved black or brownish spots, curving in opposite directions, on the face, and with one or two black or brownish spots on each side of the head. When fully grown it measures about one and three-fourths inches in length.

There are two broods of Spotted Cut-worms produced in one season; those of the last brood issue from the eggs in the fall, hibernate, and reach their full size in the latter part of April or during the first half of May of the following year. After reaching their full size they burrow into the earth, and prepare for pupation by forming a small cell; the moths appear early in June, and soon deposit their eggs, from which a second brood of Cut-worms is produced; and it is to this second brood that the worms found in the Hungarian field undoubtedly belonged. I did not rear any of these to the perfect state, but on the evening of September 9th I caught two of the moths on the side of a house, where I saw several more. They were all very fresh appearing, and were no doubt produced from this second brood of worms. These moths, in the course of a few weeks, deposit their eggs, and from these the hibernating worms are in due time hatched.

On the same day that I examined the Hungarian field (July 18), I collected ninety-four Army Worms in a very short time, taking only those which were nearly full-grown; these I placed in two separate apartments of a box improvised for the occasion. This box was composed wholly of pine boards, and when closed was perfectly dark within. It was divided by a partition into two apartments, and each apartment had a separate, close-fitting lid. In one apartment I placed those worms which had one or more Tachina eggs attached to their bodies; these eggs are small, elongate-elliptical, raised white objects, and were usually placed on the anterior part of the body. The majority of the worms had from one to three of these eggs attached to them, but some had as many as half a dozen.

In the other apartment I placed those worms which had none of these eggs attached to them. I took great care in separating them, and am certain that the worms designed for a certain apartment were in every instance placed in that apartment. Both lots of the worms were fed on timothy, the leaves of which they greedily devoured. Sometimes, in raising up one of the lids, I would find some of the worms near the top of the box on the stalks of timothy; but as soon as the light struck them they let go their hold and dropped to the bottom of the box, and quickly hid themselves beneath the grass, etc., with which the bottom of the box was covered.

By the 28th of July all of the worms had ceased to feed, and had crept beneath the grass, etc., in the bottom of the box, and prepared for pupation.

In the apartment containing those Army Worms which had none of the Tachina eggs attached to them, the moths issued as follows:

August 6, one; August 8, three; August 10, seven; and August 11, nine.

Altogether twenty moths issued in this apartment. These did not issue from the chrysalis at any stated hour, but the greater number issued a short time before sunset. When I examined them at half-past six o'clock in the afternoon of August 8, one of the moths had just issued from the chrysalis.

In this apartment I placed twenty-eight of the Army Worms. In an examination which I made of this apartment on the 19th of August, I found it to contain four Army Worm chrysalids and *one larva and one pupa of a Tachina-fly!* Here, then, was an Army Worm infested by this parasite, and yet showing no signs that it was thus infested!

In this case the parent fly had probably attached two of its eggs to the body of one of the Army Worms before the latter had cast its skin for the last time, and when the skin had been cast off the eggs, remaining attached to it, were also thrown off, not, however, before the larvæ or maggots had hatched out and entered the Army Worm's body.

Assuming that this larva and pupa had infested the body of only one Army Worm, there were then only three of these worms in this apartment that could not be accounted for, and these had probably died before pupating.

On the 29th of July I found in the above apartment a few larvæ, or maggots, and a great many pupæ of the Red-tailed Tachina-fly (*Exorista leucaniæ*, Kirkpatrick*). The maggots measure about three-eighths of an inch in length, are of a pale yellowish color, and the body tapers anteriorly; the posterior end terminates abruptly, and is somewhat truncated; near the upper edge of the truncation are two nearly circular, blackish-brown spots, placed transversely. The jaws are black, and are bent downward at the tips; they are probably used more as organs of attachment or of locomotion than of nutrition, as the maggot is legless; and it is very probable that it obtains its nourishment by absortion through the skin. It does not spin a cocoon before assuming the pupa form, neither does it cast its skin before assuming this form, but its body contracts into an oblong-elliptical pupa of a blackish or brownish color, and measuring nearly three-eighths of an inch in length. Some of the pupæ are shaped like a cylinder which has rounded ends, and many of them are much smaller than the measurement given above.

In the apartment which contained the Army Worms on whose bodies one or more Tachina eggs were attached, the Tachina-flies issued as follows:

August 5, one; August 6, eight; August 8, twenty-six; August 9, eleven; August 10, five flies and *three Army Worm Moths;* August 11, five; August 12, one; and August 13, one.

I examined this apartment August 19, and found in it three dead Tachina-flies, forty-three pupæ of these flies, and *one Army Worm chrysalis.* This apartment originally contained sixty-three Army

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* This fly is now placed in the genus *Memorea*, and is identical with the *Senometopia militaris*, of Walsh.

Worms; three of these were changed to moths and one to a chrysalis, leaving sixty-two as the number which fell victims to the attacks of the Tachina-flies. Of the latter there issued sixty-one flies and forty-one pupæ, a total of one hundred and four parasites from sixty-two Army Worms. All of these Tachina-flies belong to the Red-tailed species spoken of above; of the pupa that remained in the parasitized apartment, some were much smaller than the others, but they all probably belonged to the above species. These were the only parasites that I obtained from either lot of the Army Worms.

We here see the uncertainty of life among the Army Worms. Of the ninety-four that I collected at random in the Hungarian field, only about one-fourth lived to produce moths. Fully two-thirds of them died from the attacks of the Tachina-flies, and the remaining one-twelfth died either before or after pupating.

I mentioned above, the fact of obtaining three Army Worm Moths and one chrysalis from the apartment which contained only those Army Worms to whose bodies one or more of the Tachina-flies were attached. I can find no mention of this fact in any of the accounts of this insect which I have on hand. In fact, writers upon this subject appear to be of the opinion that the presence of these eggs is a sure indication that the larva is parasitized. Prof. Riley, in his Eighth Report,* page 59, says, "No worm carries these eggs into the ground with it, but falls a victim to the maggots hatching therefrom;" and on page 50 of his Second Report† he makes a statement to the same effect.

I have, on several occasions, bred the perfect insects from caterpillars which had a number of these eggs attached to each of them. In these instances the parasitic eggs were either unimpregnated or, what is more likely, were infested by some minute parasite. That these eggs are sometimes parasitized, I have had pretty good evidence, having found some which had a small orifice in one of their sides out of which the parasitic fly had evidently escaped. I have also frequently had unimpregnated insects to deposit eggs. Thus I have obtained eggs from unimpregnated female Polyphemus Moths (*Attacus polyphemus*, Linn.) and also from female Yellow Cankerworm Moths (*Hibernia tiliaria*, Harris). Even birds sometimes deposit eggs without having been previously impregnated. Several years ago a female Purple Martin (*Progue purpurea*) which had not been fortunate enough to secure a male consort—a veritable old maid—constructed a nest near my father's house, and laid a full complement of eggs; but these, of course, did not hatch.

The first Army Worm Moth which I captured the present season was taken at about three o'clock in the afternoon of the first day of August; at the time of its capture the sun was shining brightly. When first seen this moth was flying toward me; it soon alighted upon the grass, but made no attempt at concealing itself, and I had no difficulty in capturing it. The next day I found one of these moths on the grass beneath a door which rested against the fence. Both of these moths were very fresh appearing and had evidently but recently escaped from the chrysalis. On the evening of August 8th I captured five of these moths; one of them was taken under a woodshed, an open structure boarded up on three sides, and roofed over—one on a clover blossom and the remaining ones were upon the blossoms of the common Soapwort or Bouncing Bet (*Saponaria officinalis*). Those on the flowers allowed me to examine them very closely without attempting to fly away—in fact, they did not seem to be at all aware of my presence. I also found several other specimens flying about; they flew low, with a rapid, darting motion, and their flight was accompanied by a slight humming noise, somewhat resembling that produced by the Hawk Moths (*Sphingidæ*), but not so intense. For several nights after this I saw several of the moths each evening, after which none were to be seen.

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* Eighth Annual Report on the Noxious, Beneficial and Other Insects of the State of Missouri.

† Second Annual Report, etc.

On the 18th of August I found on a blade of grass a young Army Worm which agreed very well with the description of this worm in its second stage, as given by Prof. Riley on page 184 of his Eighth Report.*

Four days later I found another worm (or the same worm farther advanced) in the same locality as the above. It agreed very well with the description of the third stage of the Army Worm as given by Riley in the Report referred to above. Neither of these worms were reared to the perfect state, but I have no doubt that they were genuine Army Worms, and also that they were the progeny of the moths which appeared in the fore part of the month.

Toward the evening of August 26, I found on a blade of grass an Army Worm which agreed precisely with the description which I took of those found in the Hungarian field; it measured about one-half of an inch in length. On the 6th of September about thirty larvæ, or maggots, of the Military Microgaster (*Microgaster militaris*, Walsh), and at once commenced to spin their elongate ellipsoidal white cocoons. Prof. Riley in his Second Report,† page 52, and again in his Eighth Report,‡ page 53, says that the cocoons of this insect are enveloped in a mass of flossy silk, but the above cocoons were not enveloped in such a manner, but were spun side by side, and rested upon their ends.

The winged parasites issued from these cocoons ten days later.

About the first week in September I found two Army Worms beneath some boards that lay upon the ground. At about one o'clock in the afternoon of September 28th I found a nearly full grown Army Worm on a green head of timothy; the day was quite cool and cloudy. On the same day I found three other Army Worms beneath some boards: one of these had a Tachina egg attached to its body.

Of those found early in September, one assumed the chrysalis form on the 22d of September, and the other pupated a few days later. These were both placed in a glass jar and set away in the attic. I examined the jar, for the first time after setting it away, on the 15th of October, and found in it one living Army Worm Moth. Of the Army Worms found on the 23d of September two died shortly after they were captured, and the third pupated about a week later, and was changed to a moth on the 22d of October. No person who has read the above facts can doubt that these three moths were produced from the worms which hatched from eggs deposited by the moths which appeared in the forepart of the preceding August.

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*Eighth Annual Report, etc.

† Second Annual Report etc.

‡ Eigth Annual Report etc.

On the 29th of October my brother (Mr. A. C. Coquillett, who has aided me much in studying out the life-history of this and of many other insects) brought me an Army Worm which measured about one-half of an inch in length; on the first of November he brought me four of these worms; one measured seven-eighths and the others three-fourths of an inch in length. Three days later he brought me another Army Worm, and on the following day he brought me a second; the first of these measured about three-eighths, and the last one about one-half of an inch in length. All of these were found in or beneath shocks of corn.

This is as far as I have been able to carry the history of this insect. My attention was not called to it until the month of July, 1881, when I received a communication from Prof. Cyrus Thomas, requesting me to study up the life-history of this insect in this locality.

Description.

As the Army Worms which I have found differed in a few respects from the descriptions given by other writers, I append a description of them herewith. To avoid confusion only one side of the worm's body is described.

A white dorsal, sub-dorsal and stigmatal line, the second being midway between the other two; the dorsal space—the space lying between the dorsal and sub-dorsal lines—is sometimes pale, greenish-ash; at other times the upper half of this space is of the above color and the lower half is dark brownish, lighest in the middle and edged about with a whitish line; below the sub-dorsal white line is a pale yellowish stripe, or a pinkish stripe with a yellow line in the middle, and edged below with a white line: between the latter and the stigmatal white line is a greenish-ash stripe mottled with brown, or a brownish stripe in the middle of which is usually a light colored line; below the stigmatal white line is a pinkish or yellowish stripe, usually edged below with a light colored line; below this the body and venter is pale greenish mottled with pale brown or yellow; piliferous spots sub-obsolete, black; spiracles wholly black; length about one and one-half inches.

Head greenish-white or pale-brownish, usually covered with a network of brown lines, and marked with two curved diverging brown stripes near the middle of the face.

The younger worms are usually darker colored than the older ones. The principal colorational difference is to be found in the stripes below the sub-dorsal and stigmatal white lines.

In the lighter specimens these stripes are pale yellowish, but in the darker ones they are strongly tinged with pink, and have a lighter line in the middle.

In one specimen which I found on a wild Aster on the 30th of July, the entire body was strongly suffused with pink.

NUMBER OF ANNUAL BROODS.

The number of broods which this insect produces in one season has been a subject of considerable discussion for the past twenty years, and the question has not, up to the present writing, been settled with perfect satisfaction to all parties concerned. Profs. Riley and Walsh, and with them several other writers, maintained that it was single-brooded, and favored the theory of hibernation in the imago or moth state. Prof. Thomas, on the other hand, believed that it was double-brooded, and favored the theory of hibernation in the chrysalis state.

In the preceding pages I have given an account of two successive broods of these insects and a partial account of a third. As the latter were young worms, taken as late as the month of November, there can be no doubt that they will hibernate in their present state, finish their growth in the early part of the following spring, and be changed to moths in the months of April or May following. I have obtained moths of a closely allied species—the *Leucania phragmatidicola* of Guenee—in the latter part of May, from larvæ that had evidently hibernated, and it is very probable that the Army Worm Moths issue at about the same time. These may be known as the first brood of moths of the season. The Army Worms which I found in the Hungarian field were no doubt hatched from eggs deposited in the month of June by the above moths; and these worms, after completing their transformations, would produce the second brood of moths early in August.

From the eggs deposited by this second brood of moths would be produced the worms which I found in the latter part of August and fore part of September; and these worms, after completing their transformations, would produce the third and last brood of moths.

The eggs from the third brood of moths would produce the hibernating worms, and thus the cycle is completed.

From this we see that there are three broods of these insects produced in one season, and that they hibernate in the larva state. These observations apply solely to this locality of McHenry county, one of the most northern counties of the State of Illinois. It is very probable that in more southern latitudes one or more additional broods are reared in one season. They also apply to the sedentary race, or those which live throughout their entire lives as cut-worms.

That there are two distinct races of Army Worms I have not the slightest doubt. One of these has for many generations lived as cut-worms, never migrating from one field to another, while the other race at a certain season of the year migrate from one field to another in large armies, and this race has manifested this migrating habit for many generations past. Of course this latter race when young live as cut-worms until they acquire a certain size, when they commence their migrations; but the sedentary race, it is my opinion, *never* perform these migrations.

This, it is true, is all speculation, as I have never had an opportunity of studying up the habits, etc., of the migrating Army Worms. In making these remarks I desire to call the attention of those who have an opportunity of studying both races of this insect to this subject.

SEASONS MOST FAVORABLE TO ITS RAPID INCREASE.

It has been frequently observed that the Army Worms are most abundant during a wet season, and this fact has given rise in many minds to the belief that such seasons are most favorable to their rapid development; but I am strongly of the opinion that this belief is erroneous.

It is well known that insects develop most rapidly in warm, dry weather; in fact, moisture is known to be very injurious to the health of many kinds. This is known to be the case with the common Silk Worm (*Sericaria mori*, Linn.), and I have proved it to be so with the Celery Worm (*Plusia simplex*, Guenee), an insect that. has been quite destructive to lettuce in a few gardens in this locality the past season. A brood of these worms which I reared from the eggs, on perfectly dry leaves—that is, leaves that were free from moisture—until they were nearly full grown, appeared to be very costive; supposing this to be due to a lack of moisture, I dipped some leaves into water and fed them to the worms. Shortly after this the worms were taken with a kind of dysentery, which so reduced them that in a short time all but one died. This one in a few days assumed the chrysalis form, but died before producing the moth.

I have but little doubt that wet food has the same effect on the Army Worms that it has on those mentioned above. Of the twenty-eight Army Worms which I collected in the Hungarian field, and which had no Tachina eggs attached to their bodies, only three—or about *one-ninth* of their entire number—died from some unknown cause; while in confinement they were fed on perfectly dry, but green, leaves. The weather for over a month previous to the date of collecting them (July 18) had been very dry; a week or so after this there came a heavy rain-storm, and from this date up to the month of November a greater amount of rain fell than was ever known to have fallen in this period for many years past. Out of the five Army Worms which I took in September, two—or nearly *one-half* of the whole number—died from some unknown cause; they were reared in the same manner and in the same place as the others. They died soon after being captured, and shortly after death their bodies turned black precisely as the bodies of the Celery Worms had done. I can assign no reason for this except it be that they died of the same disease, which was produced by devouring wet food.

Not only is rain injurious to the health of these insects by forceing them to eat wet food or starve to death, but it also tends to prevent them from developing rapidly by reducing the temperature, as it is a well established fact, and perfectly consistent with reason, that insects develop more rapidly under a moderately high, than under a low temperature.

In their various functions insects approach much nearer to plants than the higher animals do; in fact, the mode of living and reproduction of some insects—such as the Plant-lice and kindred insects—and plants, is very striking. In view of this fact we naturally infer that any change in the temperature which produces a given effect in plants, will produce a like effect in insects.

It has been ascertained that plants have a certain *zone of temperature* outside of which it is impossible for plant-growth to take place; and also, that at a certain degree of temperature plant-growth proceeds more rapidly than at any other degree.

Now, from what we stated above, it is natural to suppose that insects also have a zone of temperature, and also that at a certain degree of temperature insect growth progresses more rapidly than at any other degree. It is not to be supposed that the highest degree which the air ever attains in our northern States exceeds the zone of temperature in insects, as they appear to develop the most rapidly during the hottest weather. In this latitude the temperature seldom exceeds 100° Fahrenheit. Taking this for the degree at which insects develop the most rapidly, it follows that as the temperature sinks below this the development of insects is retarded in proportion to the number of degrees which the temperature lowers. During a wet season the temperature is much lower than during a dry one. This is easily explained by the simple fact that when the rain falls upon the surrounding objects it withdraws from them a sufficient amount of heat to evaporate it, and thus reduces their temperature very materially. It follows that during such seasons the life of the insects is greatly extended to what it would have been in a dry season, and it is thus subjected to the attacks of its enemies and diseases for a longer period; and it is very probable that when its temperature continues for some time above its natural zone of temperature, that this alone would prove fatal to it, although it is more likely that this would simply cause it to pass into a lethargic or torpid state.

The reason for this insect appearing in such great numbers during wet seasons may be found in the following passages.

A dry season nearly always precedes a wet one, and the intervening winter is usually a steady cold one—just the sort best suited to the successful hibernation of insects of all kinds. It follows that during the dry season the Army Worms will become greatly multiplied, and the following winter being favorable to them, the majority of them will hibernate in safety, and thus they will appear in great numbers in the forepart of the following year. It is only the midsummer brood of these worms that migrate; and as the rain seldom begins, in a wet season, earlier than the month of August, this brood will have attained a sufficient size to travel from one field to another, and commit their ravages, before the rainy season fairly begins. In the months of June and July but little rain falls; and it is in this period that the Army Worms appear in the greatest numbers. Later in the year, in wet seasons, the heavy rains occur, and these very materially lessen the number of the worms in the succeeding broods, and thus prevent them from appearing in destructive numbers the following season, which is usually a dry one. Moreover, the winter which follows a wet season is usually a mild, open one, and this, contrary to the popular belief, is very unfavorable to the successful hibernation of all kinds of insects.

We see, then, the reason why the Army Worms are so much more abundant during a wet than during a dry season; and also that, were two wet seasons to occur in succession, these insects would not be so plentiful the second season as they were the first.

That every alternate winter is a mild one, and each intervening winter is a steady cold one, is proved by the following observations, taken from my diary:

1876.

The winter of 1875-76 was a very mild one; but little snow fell, and we did not use the sleigh once during the entire winter.

1877.

Steady cold weather from the first of last December to the latter part of January.

Jan. 27—Begins to thaw,

Jan. 29—A shower of rain—the first this year.

March 2—A snow-storm; snow about four inches deep on the level.

March 16.—A heavy snow-storm; plenty of snow-drifts three feet high.

March 31—A rain-storm; snow nearly gone.

1878.

The winter of 1877-78 was a very mild one; there was not enough snow to make good sleighing up to the latter part of January. The week before Christmas many small moths were flying about, and I frequently saw Hedgehog Caterpillars (*Pyrrarctia Isabella,* Smith) crawling about.

Jan. 31—A snow-storm.

Feb. 1—Snow-storm; about six inches deep.

Feb. 19—A rain-storm.

Feb. 21—A rain-storm; snow nearly gone.

1879.

Steady cold weather from the middle of last December to the latter part of January; during this period there were scarcely six warm days. The snow was about eighteen inches deep on the level, and during the first week in January the temperature fell to twenty degrees below zero.

Jan. 27—A rain-storm.

1880.

Last December some snow fell, but not enough to make good sleighing; during the first week in January there came a heavy rain-storm, which soon melted all of the snow and drew the frost entirely out of the ground.

1881.

Steady cold weather from the latter part of last November to the 7th of February, when there came a rain-storm; between these dates there were scarcely two thawing days. There was some snow during the greater part of the winter, but not enough to make good sleighing up to the middle of January, when enough fell for this purpose. This lasted until the 8th of February, when it was spoiled by the rain.

Feb. 12—A heavy snow-storm.

Feb. 26—Since the above date there has been steady, cold weather, with an abundance of snow. A rain-storm.

April 8—Since the last date the weather has been cold, with a few warm days. At this date there are a few bare spots of ground, but the ground is mostly covered with snow to the depth of three or four inches.

April 24—Snow nearly gone.

In some of the above years the observations were carried to the month of March or April, while in others they do not extend beyond the month of January or February; in these latter cases no snow-storms to amount to anything occurred later than the dates here given.

From these observations it will be seen that the winters of 1875-76, 1877-78, and 1879-80 were mild ones, with but little snow; while the intervening ones were cold, usually with an abundance of snow.

I regret that I have kept no account of the summer seasons, that I might have some facts to give to bear me out in the statement that I made above, namely that a dry summer always follows an open winter, and that a wet summer follows a steady, cold winter; as these winters alternate with each other, so also do the dry and wet summers. I have frequently noted this to be a fact, but have made no entries in my diary to confirm it.

THE MIGRATING HABIT.

It is a well established fact that while some of the Army-worms live as Cut-worms—remaining hidden throughout the day and coming forth only at night to feed—others hatched out at about the same time, and subjected to precisely the same influences, manifest the migrating habit and travel from one field to another in large companies or armies. Prof. Thomas, on page 170 of his last Report,* says:

"In 1875 I noticed in my own yard the species exhibiting at the same time these two traits, or habits. In one portion of the area they were at work as Cut-worms, while an army was marching across another portion from an adjoining yard, the two bodies not commingling or having any connection with each other. Those acting as Cut-worms were paler and much less distinctly marked than the others; they were also larger when fully grown."

What then is the cause of this difference in the habits of insects which belong to the same species?

I have never seen a satisfactory answer to this question; and when facts are wanting theories flourish.

It is my opinion that the worms which were living as Cut-worms in the above instance were the progeny of moths which, for many generations, had inhabited this locality; while those composing the traveling army were from moths that had migrated thither from some distant locality. It is not at all probable that the worms exhibiting both these traits were from the same moth; the larger size and paler color of those acting as Cut-worms shows distinctly that they belong to a different race than the traveling worms, although belonging to the same species. It is very probable that the traveling worms were the progeny of moths which formerly inhabited some of the low marshes along the banks of a stream which has its source in the mountains. When the weather becomes warm in the early summer the snow on the mountains melts, and when this takes place at all rapidly the streams which flow from them become greatly swollen, and overflow the low, marshy meadows along their banks. But before this occurs the Army-worms which inhabit these low meadows—prompted by an inherent instinct—migrate to the higher land. That insects of this kind do perform such migrations is confirmed by the observations of Dr. Harris, who, in giving an account of the Salt Marsh Caterpillar (*Arctia acraca,* Drury), which inhabits the marshes around Boston, says:*

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* Tenth Report of the State Entomologist of Illinois.

> "During this month (August) they come to their full size, and begin to run, as the phrase is, or retreat from the marshes and disperse through the adjacent uplands, often committing extensive ravages in their progress."

A brother of the writer, who has spent about one and a-half years in Merrick Co., Nebraska, says that the Platte River—which has its source in the Rocky Mountains—reaches its highest point during the month of June. According to the Isothermal Map furnished by the Smithsonian Institution, and published on plate IV of the Patent Office report for the year 1856, the climate of Nebraska in the summer is about that of Missouri and Tennessee during the same season; and as the Army-worms in the latitude of these States usually make their appearance in the month of June, their coming would be at about the same date that the mountain streams in the same latitude attain their greatest height. Now it naturally follows that insects which for many generations past had been in the habit of migrating at a certain season of the year, would be very likely to manifest this habit, even when reared in localities where it would be unnecessary to perform these migrations; and as moths are known to travel long distances in their migrations it is only reasonable to suppose that the Army-worms which devastate our fields are the progeny of moths that were bred in these marshes and have migrated to the infested locality; or at least are the progeny of moths whose ancestors were reared in these marshes and which had not yet lost the migrating habit. That an insect which, at one time of its life, possesses the sedentary habit and pale color of the Cut-worm, should suddenly acquire the migrating habit and dark color of the Army-worm, is not at all probable; and we can account for this difference in habit and color of the same species of insect only by supposing that they belong to two distinct races, which originally inhabited two different portions of our country, and whose habits were largely influenced by their environments.

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*Insects Injurious to Vegetation, page 351.

NATURAL ENEMIES.

I gave above an account of the Red-tailed Tachina-fly (*Exorista leucaniaæ*, Kirkpatrick,) and of the Military Microgaster (*Microgaster militaris*, Walsh). These are the only parasites that I have ever bred from the Army-worms. I found three or four larvæ of Janus Ground-beetle (*Galerita janus*, Fabricius) in company with the Army-worms which I found in the Hungarian field, and as these larvæ are known to be predaceous I have no doubt that they destroy large numbers of the Army-worms. These larvæ quite closely resemble that of *Galerita lecontei*,[*] Dejean, but differs by having the femora or thighs of the first pair of legs but slightly larger than the others. Its body is nearly cylindrical; the first segment is the longest, and tapers toward the head. The head is widest in front, from whence it tapers posteriorly, but is wider at its junction with the first segment than the latter is; it is of a yellowish-brown color, and from the middle of the face arises a cylindrical yellowish protuberance, which terminates in two short prongs. The body is of a black color, and the sutures of the segments are a dull greasy-white. The venter is also of this latter color, and is marked with five rows of black spots, those in the middle row the largest. On the posterior end of the last segment are two divergent bristles, which are about three-fourths as long as the body, including the head; they are of a black color, with their bases yellowish. When fully grown, this larva measures about three-fourths of an inch in length.

The pupa closely resembles that of *Galerita lecontei*,[†] Dejean. It is of an elongate elliptical shape, rounded behind, of a yellowish-white color, and is thinly covered on the back of the abdomen with short reddish hairs, which grow mostly in clusters or small patches. The eyes are dark-brownish. Two of the leg-cases project about one-eighth of an inch beyond the tip of the abdomen, and are united nearly to their tips, each of which is divided into two prongs. On each side of each of the abdominal segments one, three, four, five and six, is a long, cylindrical, whitish projection, thickened at its base, and having at its outer end a small bulb which bears one or two stiff, reddish bristles. This pupa measures, from the fore part of its head to the tip of its abdomen, less than one-half of an inch.

The perfect beetle has a black head, blue-black wing-cases and yellowish-brown legs and thorax, and measures nearly three-fourths of an inch in length.

On the 21st of August I found a larva of this species running over a bare piece of ground. I placed it in one of my breeding cages, and shortly afterward threw a Cabbage-worm (*Pieris rapæ*, Linn.) into its cage. This it quickly seized in its jaws and soon extracted its juices. On the 28th of August this larva became a pupa, and the perfect beetle issued on the 10th of the following September.

I have pretty good evidence that the common Striped Gopher occasionally feeds upon Army-worms. Several years ago I shot one of these animals as it was running towards its burrow in a timothy field only a few yards from a field of corn; upon examining it I found in its mouth what I then supposed was a Cut-worm, but which was very probably an Army-worm. At any rate, an animal that will feed upon Cut-worms will most assuredly feed upon Army-worms also. After carefully examining the above specimen, I searched for others, and repeatedly saw them running toward their burrows, each with what appeared to be one or more of these worms in its mouth. But whether these Gophers destroy enough Army-worms and similar insects to repay for the damage they do to corn and other field-crops, I am not prepared to say. Besides their well-known habit of digging up the newly-planted corn, I have seen them feed upon the green heads of timothy. In doing this they stand upon their hind-legs, bite off the stalk as high up as they can reach, and, holding the head between their fore-paws, they take a few bites and then throw it away, and soon afterward bite off another stalk, and repeat the same maneuvers. After taking as much as they wish, they hold their fore-paws each side of their mouths, apparently for the purpose of forcing the contents of their mouths into the cheek pouches, which they use for laying in their winter stores.

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[*] Figured on page 433 of "Packard's Guide to the Study of Insects" (Fig. 370), and reproduced on page 153 of the "American Entomologist, Vol. III. (Fig. 57).

[†] Figured in "Packard's Guide to the Study of Insects," page 433, Fig. 371.

SUMMARY.

To sum up in a few words what we have stated in the foregoing chapters, we find that there are two distinct races of Army-worms. The sedentary race rears three broods in one season, and hibernates in the larva state. The migrating worms are the progeny of moths which were bred in some remote locality, and migrated to the locality in which the worms appeared.

PART II.

REPORT OF PROF. G. H. FRENCH.

The following articles, which constitute the remainder of the report, were furnished by Prof. G. H. French, who, at my request, made a special study of the species described; and during the past season was engaged by me to write out his notes for publication.

CYRUS THOMAS.

THE CORN-ROOT WORM.

(*Diabrotica Longicornis*, Say.)

Near the last of July, 1880, I received from Dr. E. R. Boardman, of Elmira, Stark county, a package of small larvæ, with a statement that they were doing considerable damage to corn in that vicinity. The extent and character of the work done by the insect can be best seen by reference to such parts of his letter as related to the insect, and which are as follows:

"I address you at this time in regard to the larvæ of some unknown insect which I find working in the corn. Since my return from the State Field meeting (meeting of the State Natural History Association), numerous complaints have been made to me in regard to a worm that was preying upon the roots of corn, and to-day, having the first leisure moment that I have had, I visited the infested fields. The field examined was a fine, rich, level prairie, thoroughly underdrained with tile, and has been cultivated in corn for a number of years. The ground was clean, and the crop had been well attended. The corn was a fair growth, and had just begun to ear. At first one would not think there was anything amiss with it, but on close inspection I could see that many hills were withering, and on taking hold of them, they pulled up very easily, and the fibrous roots were found all eaten away. A closer examination revealed hundreds of small white worms about half an inch long, and the size of a No. 5 Klager pin. The corn had thrown out its first row of brace roots, and in these I found numerous worms at work. Some hills that had been attacked earlier had not developed brace roots, but had thrown out another set of fibrous roots from the stalk, and these had been attacked by the worms. I thought the worms were the larvæ of some Scarabaeidæ, but could not determine. The field examined contained eighty acres, and had a large field adjoining it on the west. The damage in this field will, I think, amount to at least one-third of the entire crop. I examined several hills that appeared as yet unaffected, but found the worms in the brace roots."

The worms sent me proved to be, as Dr. Boardman had stated, the larvæ of some beetle, but I did not think they belonged to the family given in his letter. Their size and shape more resembled the larvæ of *Diabrotica Vittata*, or the Striped Cucumber-beetle, than anything else with which I was familiar; and in my reply to his letter I told the Doctor that I thought they must belong to the family Chrysomelidæ, and possibly to the genus Diabrotica, though at that time I did not know that any of the species attacked the roots of corn.

After we were through with our investigations, we found that Dr. C. V. Riley had referred to its having been found working in the roots of corn in Missouri, in the introduction to his report to the Commissioner of Agriculture, March 1st, 1879. (See page 208, Agricultural Report for 1879.) The worms were placed in a suitable dish for rearing, as that alone would settle the question as to wha they were. But before the perfect insects were developed, Dr. Boardman wrote again, under date of August 5th, as follows:

"In regard to those worms infesting the roots of corn, I am inclined to think your conjecture will prove correct. I have again examined the ground, and find large numbers of *Diabrotica Longicornis* on the stalks of the corn, and also a number of the pupæ in the ground under the corn. When I gathered the worms that I sent you, I noticed a number of them in one or two hills where the worms had disappeared, but did not mistrust that the worms could be the larvæ of a Diabrotica. I have examined your reference to LeBaron and Thomas, and it goes far toward confirming the opinion that you are correct. *D. Longicornis* have been very bad on our vines this year; in fact, more troublesome than *D. Vittata*. I have usually found them very plenty on thistles, but have not seen them do much damage to vines until this season. This is another circumstance that leads me to think your conjecture correct. I have never before found them in any numbers on the corn."

On the 17th and 18th of August, two beetles hatched from the worms sent me by Dr. Boardman, and, as he had surmised, proved to be *Diabrotica Longicornis*, Say.

Besides the knowledge of what was doing the damage, we had some of its habits from the Doctor's observations; but another letter from him, under date of August 20th, gives a few more items of its history, together with some facts as to the extent of its ravages. He says:

"Your favor of the 17th inst. reached me this evening, and I hasten to reply. The next day after sending you those specimens, I found, on examining some hills of corn, that the worms were gone, or nearly so, but on digging a little in the dry dirt below the hill, I found a quantity of the pupæ of Diabrotica, and on looking still further, I found large numbers of *D. Longicornis* on the corn. It is my impression that they are more than one-brooded, as I still find some larvæ not more advanced than those I sent you. I find now no larvæ in the fibrous roots, but in the brace roots they are still at work, while the pupæ among the fibrous roots (or where they were before they were eaten up) have nearly all changed to the imago, and are swarming everywhere. Yesterday, on sweeping the ragweed (*Ambrosia Trifida*) with the bug net, I could sweep them off by the hundreds; in fact, they are swarming in immense numbers. There is no mistake as to the correctness of your results in hatching.

"'The damage to the corn crop is much greater than I had at first anticipated, and I find, on more extensive inquiry, that it is widespread. Your article in the 'Prairie Farmer' has led a great many to examine their cornfields, and they find that the injury done their crops, which they had attributed to the dry weather, is due in a great measure to this insect. Hon. J. H. Lewis, of Knox county, informs me that there are hundreds of acres of corn in that county that will not pay the rent this year, and some pieces in the circle of his acquaintance are entirely destroyed. Over this county (Stark) the injury will be very great. Occasionally we see a field that is uninjured, and those are on new ground or on ground that was in oats last year. So far as I can learn, the most serious injury is on lands that have been cultivated in corn for several years in succession. Last year my crop was nearly destroyed by the Aphides (*Aphis Maidis*), but this year I have escaped injury (from Aphis) on the same ground. Some little injury has been done in some places this year by the Aphides, but it is slight in comparison with the Diabrotica.

"As to remedies, I fear that unless we can get the help of some other insect to destroy them, they will prove a serious pest, in spite of remedies. I think your suggestion of rotation of crops, is probably at present the most effective remedy. I have noticed for the last few years that they were quite abundant in the ragweed growing along the roadsides, especially on the kind known as the horseweed, or great ragweed (*Ambrosia Trifida*). This appears to be one of their favorite food plants. Might we not accomplish something towards their destruction by cutting down and destroying this vile weed? I think it of importance that we study more closely their habits, for judging from this year's work, they will prove a formidable enemy. So far as I can yet determine, they do not stay long on the corn after hatching, but resort to the weeds."

As may be inferred from some parts of the Doctor's letter last quoted, I had suggested an inquiry as to what had been raised on the lands the previous year, and also whether a rotation of crops would not prove at least a partial remedy against the ravages of this insect, but this may be appropriately discussed under the head of remedies. Up to this point in our investigations we had found out but little of the habits of the insect, aside from the fact that the larvæ ate the roots of corn, and that the beetles were to be found in the corn and upon the flowers of ragweed and other weeds. From the last it might be inferred that ordinarily the weeds constituted their food, both in the larva as well as in the perfect state. Acting upon this hint, Dr. Boardman made farther examinations both in the cornfields and among the weeds, when he wrote me again, first under date of August 30th:

"The larvæ appear to be all out of the corn roots, and the beetles have gone into the ends of the ears in large numbers, but I cannot find that they are depositing any eggs there. They seem to be feeding on the kernel. A storm on the 27th prostrated whole fields that had been undermined by them. Corn on stubble land is standing and looks fair."

Under date of August 31st he writes again:

"I have found to-day larvæ of *D. Longicornis* in corn roots and in roots of ragweed, proving conclusively that they are more than one-brooded. Where the beetle enters the ear it eats the silk (pistil) off, and in many instances, I think, has injured the corn by doing it before the ovum has become fecundated, and by so doing prevented the corn from filling."

This gave us some valuable data in regard to the food of the insect in its different stages. Dr. B., in his communication of August 5th, says he usually found them abundant on thistles, and that during that season—1880—they were more troublesome to his vines than *D. Vittata*, the usual cucumber and squash beetle. We might suppose that they frequented thistles and other flowers, but we are not left to conjecture on this point. Among other possible remedies, I had, in one of my articles in the Prairie Farmer, suggested that the birds might aid in reducing the number of these beetles. In response to this, Prof. S. A. Forbes, of Normal, Ill., who has been making the food of birds and other animals a special study, writes me under date of August 28th, 1880, as follows:

"*Diabrotica Longicornis* is one of our most abundant beetles here in August and September, on thistles—occasionally, also, on Golden rods and some other compositæ. I have never noticed it on *Ambrosia*, however. Mr. Peters brought in a number this afternoon, and I opened the stomachs of two of them and found the whole alimentary canal packed with thistle pollen. I have never found the species in any bird."

In regard to the food of this beetle, I might add that I have this year—1881—found them in considerable numbers in my black wax beans, in my garden. Upon this point, as well as the prevalence of the insect this season, Mr. F. M. Webster, of Waterman, DeKalb county, writes under date of September 21st, 1881:

"While upon the subject of green, I wish to say that those little miserable green *Diabrotica Longicornis* are swarming all over our fields in every possible situation. I have found them not only denuding the ears of corn of silk, but actually eating the kerne it being in a state of hardening. To tell you the truth, I have graver fears of this insect in the future than I have of the Chinch-bug. Up to the first of August I had not noted them in any numbers."

Putting this with two communications from the same writer of an earlier date, we have confirmation of Dr. Boardman's conjecture, that there are more than one brood of the beetles in a season, a point we shall want to notice further along. August 8th, 1881, Mr. Webster says:

"The *Diabrotica Longicornis* has not put in an appearance; have not seen a single imago this season."

Under date of September 10th, 1881, he writes again:

"I believe this insect is now at work, but I cannot find the worms. Corn is withering about the edges of the fields and on high gravelly knolls. I have had but one opportunity to examine, and found all the brace roots destroyed, and found only one insect at work, and that a small green worm which I have sent to Miss Middleton."

It may be well, before giving items from any more letters, to go over some of the points already brought forward.

That this species of *Diabrotica* is, if anything, a more general feeder than *D. Vittata* seems to be pretty well established by the several observers whose notes we have. According to Dr. Boardman, in the perfect state it feeds readily upon the pollen of several composite weeds, the silk and soft kernels of corn, and cucumber and other vines; while the larvæ have been found by him feeding upon the roots of corn and ragweed, and we do not know but they may feed upon the roots of any plant whose leaf or pollen or other portion of the top furnishes food for the beetle. Prof. Forbes confirms the pollen-eating habit of the beetle, while Mr. Webster attests to finding it eating kernels of corn. As before said, I have found the beetles eating my beans. As to the number of broods in a season, we have good reason to infer that there are two or more. I received the larvæ spoken of in Dr. Boardman's letter July 31st, 1880. Some of them were, to all appearance, ready to pupate. If they did change within the next few days, and hatched August 17 and 18, that would give us a pupal period of about two weeks, or the same as the striped beetle *D. Vittata.* We are told that it is about a month from the time that the egg of the last named species is deposited at the roots of the cucumber vine till it is ready to pupate; and that the pupal period lasts two weeks, making six weeks from the egg to the perfect insect. As the *D. Longicornis* has the same pupal period and a similar habit, it is fair to presume that it takes about the same time for it to go through with its transformations, or that there are from two to three broods in a season, the last probably passing the winter in the ground in the pupa state. The striped beetle deposits its eggs near the roots of cucumber and squash vines, and the fact that the larvæ of this one have been found in the roots of corn, and of such weeds as furnish food for the beetles, is almost conclusive proof that it has the same habit of depositing its eggs. Very naturally we should ask of the extent of injury done by this insect, and are we to apprehend danger from it in the future? From Dr. Boardman's statement that they did considerable injury in Knox county, as well as Stark, and from information obtained from other sources, we may conclude that they were pretty well distributed over .the northern portion of the State during 1880. On this, a writer from LaSalle county in the Prairie Farmer says: "They have injured the crop seriously in this eastern part of the county."

But even with such accounts as these we might conclude, as we had not known of it before, that it went into the corn-fields because of its being more numerous than common, and that other plants were its preferred food. As to which plant may constitute its chief food it is not possible to say, from lack of observation on that point, but we can form some opinion of what we may expect by what it has done this season. Wishing to ascertain whether it was numerous this year, inquiries were addressed to several parties in different parts of the State, and I cull the following from some of their replies:

Dr. Boardman, under date of July 29th, 1881, says:

"In reply to your queries, I would say that the larvæ of *Diabrotica Longicornis* are at work this year, but not so extensively as last. I know of a few fields being destroyed by them."

He says again substantially the same, under the date of September 5th.

Mr. Webster's notes on the insect for this year have been given in another place. Others speak of grubs and wire-worms injuring corn considerably, but in such a way as to lead us to suspect the presence of *Diabrotica,* to which part of the injury may be attributed. It is possible that, like the Chinch-bug and some other insects, this, *Diabrotica* has periods of appearing and disappearing, depending upon climatic changes, but upon that we can scarcely offer a conjecture now, because of lack of observation. The fact that it is less numerous this year than it was last, in places where it did considerable damage, is evidence that it has been affected by either the climate, or insect, or other foes.

The Corn Root-worms are, when at rest, from one-fourth to three-eighths of an inch long, the body in its widest part about the size of an ordinary pin. The anterior part is more slender than the posterior part, the head being quite small, the body slightly depressed. The skin is soft and smooth, with the exception of a few very small white hairs. The color is white, with a slight yellowish tinge, the head, feet, cervical shield and tip of anal segment brownish.

While in confinement they showed themselves to be quite active, crawling over objects almost as readily as caterpillars, even up the sides of a glass dish in which they were confined.

The enlarged figure of *Diabrotica Vittata,* published in several of our books, so well represents this larva that it may be taken to illustrate it.

The beetle, or perfect insect of this species, is about the size and shape of the Striped Cucumber-beetle (*D. Vittata*), being about one-fourth of an inch long, but it differs very much in color. While the Cucumber-beetle is yellow, with black stripes, *D. Longicornis* is nearly a uniform dull, pale-green. Say, who named the species, gives the following description of it:

"Body pale-greenish; eyes blackish; antennæ as long as the body; second and third joints conjointed, shorter than the fourth; thorax subquadrate; two dilated oval impressed spots placed rather behind the middle; elytra irregularly punctured; three or four obsolete, elevated lines, of which the exterior one is largest, and colored by a brown fillet which does not attain the tip; a brown common sutural line."

REMEDIES.

These may be divided into natural and artificial; and the last may be again divided into preventive and applied. Under the first head, or natural remedies, my first thought was that we must look to the birds as aids in lessening the numbers of this beetle; and in an article prepared for the Prairie Farmer several birds were mentioned as feeding upon the family Chrysomelidæ. The last clause of Prof. Forbes' letter, as quoted in another place, dispels that idea however; and as I do not know positively that any other insect preys upon it, nothing can be said with any assurance under this head. It is probable that other insects do feed upon it; in fact, Mr. Webster has found some predaceous beetles under such circumstances around hills of corn as to lead to the supposition that they were after the Corn-root Worms.

In a small piece of corn, such as a patch of sweet corn in the garden, it is probable that some preparation distasteful to the beetles might be so placed about the roots as to prevent eggs being deposited; but this would be impracticable in a large field where the corn is mostly planted and cultivated by machinery. English gardeners prevent destruction from insects by mixing a little soot with the soil of each hill of whatever they plant, and this might be done with a few hills of corn in a garden. Also soot with ashes or plaster, or a mixture of the last two might be put on each hill after it comes up. A tablespoonful of either mixture would be enough for each hill. This would give vigorous growth to the corn, and would aid in keeping the beetles away.

But the preventive seems to be the most feasible plan of dealing with this insect, and the observations of Dr. Boardman and others suggest two ways of accomplishing this—rotation of crops and clean cultivation. By reference to Dr. Boardman's letters, it will be seen that those fields most injured last year were such as had been cultivated in corn for several years, while corn planted on new land, or land in oats the year before, suffered very little, if any.

The first field examined was one that "had been cultivated in corn for a number of years."

In another he says: "Occasionally we see a field that is uninjured, and these are on new ground or on ground that was in oats last year. So far as I can learn the most serious injury is on lands that have been cultivated in corn for several years in succession."

R. S. B., referred to before, says, in the Prairie Farmer for September 7th, 1880: "The corn seems to be literally alive now with a greenish bug about the size of a lady-bug. They eat the husk on the end of the ear, and some of the kernel while in a soft state. There was about ten acres out of forty badly injured, all on ground that was planted to corn last year." In another part of the same article he says: "The pest has been known here (LaSalle Co.) several years ago, damaging some fields as much as seven or eight years ago." This would seem to confirm the idea that the insect had a periodicity of about seven years similar to the Chinch-bug.

But little more need be said on this point. While the beetle has wings and can fly, it seems evident from the facts above noted that it does not usually fly very far, but deposits its eggs at the roots of the same plants, or those contiguous to the ones on which, as a beetle, it feeds.

If, as I suspect, the last brood pass the winter in the ground, probably as pupæ, then we can see why they would be more numerous in a field that is cultivated in corn the year after. If, upon emerging, they do not find their food-plant, they must seek one elsewhere or perish, and only a small number of them seem to find their way to the corn. But if weeds are allowed to grace the fences and roadsides, as they usually do, they can resort to these, and a good supply be kept alive to make it necessary to find some means to prevent injury from them in subsequent years.

All observers found that the pollen of various plants in bloom through August and September were eaten by swarms of these beetles, while Dr. Boardman found the larvæ in the roots of one of them. From this it is evident that if weeds are allowed to grow freely along the fences and roadsides, they will furnish the means of harboring these, as well as many other insects, and carrying them over from crop to crop, as I have hinted above, for the weeds remain green long after the corn is too ripe and dry for them to eat. The same might be said, probably, of other insects. Indeed, I am pretty well satisfied that rotation of crops and clean cultivation would not only result in a better yield, from the good effect it would have on the land, but would greatly lessen the damages from injurious insects.

THE WHEAT-STRAW WORM.

BY PROF. G. H. FRENCH.

(*Isosoma Allynii*, French.)

As Mr. John Marten and myself were passing a field of wheat, just before harvest, in the summer of 1880, our attention was attracted by seeing a great many apparently light-heads, some of which were on stalks that were partly dead, though, as a field, the grain was not quite ripe. Upon examination, many of the heads were found only partially filled. Our first thought was that Hessian-flies had caused this deficiency in fruiting, but there were very few signs of them to be found, either then present or having been present. Upon cutting open the stalks there were found inside one or more small, yellowish worms, and, as these were to be found in more than half of the stalks examined, it was at once concluded that here was the cause. From the examination we were able to give them with our pocket-lenses, we thought they must be the larvæ of some dipterous insect, as they were without feet. I took a few pieces of the stalks containing the worms, but Mr. Marten took the most that were taken from the field, as he was at the time one of the assistants in the State Entomologist's office, knowing that rearing them to the perfect state would decide to what order of insects they belonged. As my time was fully occupied with other matters, the portion took by me received but little attention, and as a consequence they dried up, instead of producing the perfect insects. Mr. Marten collected more of the stalks afterwards, and, after keeping them for a time, found a single green fly in the jar containing the stalks, that had evidently come from the samples, though I do not know that the pupa case from which it was hatched was found. The fly was thought be a species of *Chlorops*, though what species was not determined, and indeed cannot be well now, for the specimen was accidentally destroyed, though it might approximately be identified from the description that was taken. No other specimens were obtained.

Dr. Thomas referred to this in the Prairie Farmer of August 28th, 1880, giving Mr. Marten's description of the insect reared, an account of where larvæ were found in the wheat, and a general account, by way of comparison, of the manner in which species of *Chlorops* were known to work in Europe—the title of the article being "A new enemy to wheat." As only one specimen was obtained, and as there were plenty of larvæ to be found in the fields long after the grain was cut, some doubt was entertained as to the relation of the fly hatched to the general mass of larvæ, especially as it was known that the larvæ of insects belonging to at least three of the orders of insects—Hymenoptera, Lepidoptera and Diptera—at times were to be found in wheat-stalks. It was to settle this uncertainty that I decided to try to rear the perfect insects, if they should be found in the wheat this year, 1881.

An examination of the stalks this year, just before harvest, showed that they were fully as numerous as they were last; and I can, perhaps, do no better than to give some dates and conditions of insects as I find them in my note-book. The first specimens were taken June 15th, the wheat nearly ready for harvest. A more careful examination, with the aid of a low-power object-glass in the compound microscope, revealed the fact that, though the larvæ were footless, there were minute processes along the sides, that were thrust out at pleasure, and that it had a distinct transverse head armed with two distinct brown jaws. From this I thought them hymenopterous instead of dipterous larvæ.

June 30th, more specimens were taken from the fields, mostly from stalks left standing in harvesting, though some from the stubble; also found a fly in the jar containing the first lot of specimens, and, upon search, the pupa-case in the stalk from which it hatched. This was quite different from the fly obtained by Mr. Marten last summer, of a different color and much larger. It was evident that this was not the imago of one of the yellowish larvæ, of which I had so many. I may say that about this time Miss Nettie Middleton found a fly in stalks she had, which I suppose to be the same, but have not seen it.

July 8th, found two hymenopterous insects hatched in the jar containing the first specimens, but they were evidently the parasites of Hessian-flies, as a stalk containing two pupæ of that insect was placed in the jar. The insects inside the stalks were at that time still larvæ, as far as examined.

July 20th, a hymenopterous insect was found in the second lot of stalks, and there was no doubt but that it came from one of them. Upon going to the field I found one hatched, still inside the stalk, but in the act of gnawing out. Besides this I found several pupæ and larvæ in the stalks, the proportion of those found that day that had changed to pupæ being about one-fourth of all found, the three-fourths being still larvæ. After this, I have dates of finding them hatched, both in the house and in the field, up to August 20th, demonstrating apparently that the insect that had done the damage was no other than the small four-winged flies.

On August 20th, out of 20 infested stalks taken at random in the field in a place skipped in reaping, 8 had hatched and gnawed out, 4 were still larvæ, 3 were changed to chrysalids, 5 were dead and 8 were hatched, had partially gnawed through the stalk, but had not made their escape.

WHERE FOUND.

The time the eggs were deposited that produced these larvæ is unknown, and can only be surmised from the time of hatching of the perfect insects and the place in the stalk where the larvæ are found. This was inside the culm or stalk, a few inches from the ground, very seldom in the straw between the head and the upper joint, more frequent in the straw below this upper joint, and in the next internode below. They were in the interior of the stalk, usually close to or a little above the joint or node, working in the soft tissue forming the interior, the natural cavity serving in most cases to contain them, but in some instances they gnaw a partial channel to one side of this. Where the stalk is large they may sometimes be found completely embedded in the tissue of the stalk, just outside the hollow center, but in such instances they were always pretty close to or in the joint. where the stalk tissue is thickest. Sometimes more than one worm would be found in the same stalk, but in such cases they would be found in different parts of the same internode or in different internodes, it being no uncommon thing to find two internodes infested. In no instance did I find a stalk swollen by their presence, as in the case of stalks infested with Joint-worms (*Isosoma Hordei*), there being no external indication of the presence of the worm other than a somewhat premature ripening of the grain and less of it in the head. While the natural cavity in the internodes furnished them a retreat often large enough to contain them, the walls of this cavity were considerably gnawed from half an inch to an inch and perhaps more, often almost or quite to the hard exterior. Some stalks appeared to be a little spongy in their interior, as though the presence of the worm had caused an abnormal growth, but an examination of such places with a glass showed that their structure was not different from other portions of the interior of the culm, no additional fiber deposited, nor any bending or hardening of that present. it all being continuous with the tissue above.

The manner in which the injury is done by this worm seems to differ from that of the ordinary Joint-worm more in the way than in the effect. According to Dr. Fitch and others the presence of the worm in the hard tissue of the outside of the stalk, whether of the joint or of the internode, a little removed from the joint, arrests the flow of sap by the hard, knotty gall, but this seems to arrest the flow more from breaking the internal fibers of the internode. In this case there is not so often a breaking down of the stalk as with the Joint-worm, for the erect position of the culm is not interfered with, and the outer or stiff portion remains entire till the perfect insect is ready to emerge. The chief influence upon the wheat seems to be exerted during the later stages of its growth, when the worm is approaching its maturity, as it is then probably a more rapid feeder. As evidence of this, the heads are fully formed, to all appearance, but the grain in them is light, and they ripen prematurely, showing hat the supply of material for the full development of the head has een cut off.

EGGS DEPOSITED—WHEN.

As stated before, we can only conjecture a reply to this. From what was found, as stated above, in the examination of the twenty stalks August 20th, it might be inferred that the eggs were deposited in the young wheat in the fall, for in that instance over half of them had already hatched, only one-fifth remaining as live larvæ. I am, notwithstanding this, inclined to the opinion that the eggs are not deposited in the fall, but that a certain portion of them pass the winter in the straw, and provide for the continuance of the species the following spring. Drs. Fitch, Harris and others found this the case with the ordinary Joint-worm, and at the same time that a few hatched out in the latter part of summer or fall. I think the character of the past season will account for the great numbers hatching out this year, the summer, as is well known, being very hot and dry. If this be true, there will be less of the worms next season, because of more of them going through their changes after harvest this year.

Another point favoring the view that the eggs are deposited in the spring, is the fact that an examination of my specimens of straw, made while writing this (November 28th) shows that all that did not hatch during the summer are now live pupæ. In this it seems to differ from the Joint-worm, which, Dr. Fitch says, "remains in its cell in the larva state through the winter, and changes to a pupa with the first warm days of spring," for it seems these have changed to pupæ preparatory to hibernating.

Another evidence in favor of the view held may be stated: their position in the stalk. The eggs of the fall brood of Hessian-flies are laid on the blades, and the maggot works its way down to the first or upper joint, this being at the time below the surface of the ground. These worms are found one, two or three joints below this, a point not easily reached by the female to deposit her eggs in the fall, but easily reached after the wheat has begun to grow in the spring. While I can not say, from actual observation, that the eggs are deposited in the spring, the above facts furnish us pretty strong reasons for thinking they are, and I have no doubt future observation will prove the conjecture correct. It can not be that there are two broods, for no stalks were found prior to July 20th, showing their work that did not also contain the larvæ.

Before closing this part of the subject, I may say that November 29th I examined the wheat stubble in the field, and found these insects in the pupa state the same as those in my rearing-jars; while the regular gall-producing Joint-worms, evidently *Isosoma Hordei*, were found in the larva state in a clump of rye stalks, as also in a species of rye grass (*Eilymus Canadensis*).

THEIR FOOD PLANTS.

In order that I might learn as much as possible of the habits of this insect, with a view of ascertaining what remedies would be most efficient, a number of species of grass were examined, to see if wheat alone constitutes the food of the worm, or whether our wild or cultivated grasses formed a part of its diet. Nothing of the kind was found in any of the cultivated grasses, either the annual or perennial, but a worm was found in the center of the culms of *Elymus Canadensis*, or Canada Wild Rye grass, that from its position and manner of work seemed to be the same, but was a little paler in color than the Wheat-stalk worm. Later examinations after the perfect wheat insects began to appear, proved that, while they seemed related to the wheat insects, they were not the same, the fly being about the same length and color, but more slender, less hairy, and all the feet and legs black or fuscous. There was a little difference in the manner of work. While both occupied the center of the culms, the one in the grass was quite as often found in the middle of the internode, or some point a little above the joint or at the joint, while the Wheat-stalk worm was mostly just above the joint.

At the same time, what was evidently the regular Joint-worm was to be found in the swollen joints of the same species of grass, and another related species, *Gymnostichum Hystrix*, but no worms were to be found in the center of the culms of the last. Besides these, another worm was found in the culms of *Tricuspis Seslerioides*, or Tall Red-top, a coarse wild grass. These were rather more slender than the Wheat-stalk worms, of a white color, and to be found just within the outside hard portion of the culm, in the more spongy tissue, but always outside of the internal hollow. From the course and size of the burrow, it would seem that the egg was deposited about an inch above the joint or node, and the larva, when hatched, had worked its way downward. On the 29th of November, some stalks of this grass were examined, and the insects infesting them were then in the larva state. In my examinations of wheat stalks, during the summer, one or two specimens were found that resembled these, and might have been the same, though I can make this only as a conjecture.

As far as the grasses of our immediate locality were concerned, this practically settled the question of grass as a food-plant for the wheat insect. It is true, in the light of Dr. Walsh's conclusions, relating to all the different forms of Joint-worms being identical, the single specimen of perfect insect obtained from the stem of *Elymus* may have been an aberrent form of the wheat-stalk insect, for all the difference in color, but the structural differences would indicate that it was a different species. The two species of wild barley—*Hordeum*—common to this State, were not examined, for the reason that *H. Jubatum* is rare here, and the other species, *H. Pratense*, is so early a grass that it disappears before harvest time. For this reason I should think it improbable that this grass can form a food-plant for the wheat insect, for it is too short-lived to allow the larva to develop before the stalks would die.

THE EXTENT OF DAMAGE.

But little can be said on this part of the subject beyond my personal observations. I find in the American Entomologist for July, 1880, (Vol. 3, page 181,) an insect referred to that may perhaps be the Wheat-stalk worm. J. K. P. W., of Andersonville, Tenn., sends the editor some infested wheat stems, stating that "nearly or quite every stalk seems to be affected with them; as a consequence the straw is inclined to fall before the wheat is fully ripe." The editor in reply states that the worm was the larva of a hymenopterous insect, but new to him.

I have examined the wheat fields in quite a number of localities in Jackson county, of this State, and find the worms present in about the same numbers in the different localities. I have also written to a number of persons in different parts of the State, mostly north of here, but could elicit no information from any one. In a short trip to Lawrence county, the fore part of September, I examined the wheat stubble and found some of the worms, but in much less numbers than in places in Jackson county. I could not learn that spring wheat was affected with the worms, it not being raised here, all the fields examined by myself being winter wheat. From the smallness of the number found in Lawrence county, I am inclined to think the insect is not found north of southern Illinois, rather that it is a southern insect, and that it seems probable the Tennessee insects above referred to are our Wheat-stalk worms. If however we may take the almost universal light yield of wheat through Southern Illinois the past season, as an index of the presence of the Wheat-stalk worm, then we have some idea of the amount of damage done. I think in a measure this may be done. There have been a few Hessian-flies, but not enough to do any great amount of damage in this locality, and I think. from all I can learn, the same is true of the most of this part of the State. It is probable that the early coming on of cold weather a year ago, and the sudden opening of spring this year, helped to make some fields light where the growth last fall was weak; but where the fields produced a fine growth of straw, and the abundant heads gave promise of a good yield, the light heads and scant yield of inferior grain can not be laid to these causes. In each case such heads examined by myself and others were found to be on a stalk containing one or more Wheat-stalk worms.

This condition of the wheat fields I find to have been quite common, from conversation with parties residing in different places. One person tells me that in a locality in the western part of Franklin county the wheat looked fair when heading, but the heads were light, so much so that one farmer did not cut a part of his field. Another person, do not remember the county, found the heads light in his field, and cutting some of the stalks open found worms inside. A Mr. McAdam, in the western part of Jackson county, when asked how his wheat yielded, said it was very light; I found plenty of the Wheat-stalk worms in the stubble. Numerous other instances of this character might be given, but perhaps here is enough. I am satisfied that a considerable portion of the light crop of wheat that has pervaded the whole of this part of the State the past season can be attributed to this cause.

NATURAL HISTORY OF THE WHEAT STALK WORM.

After carefully looking over what has been written of our American species of *Isosoma*, to which the Joint-worm belongs, and a comparison of the Wheat-stalk insect with the others both in structure and habits, I am convinced that it is a new species, and have named it *Isosoma Allynii* as at the head of this article. I do not expect to give here a scientific description, but would refer the reader to the pages of the Canadian Entomologist for that, as I believe it best here to give only so much of a description of the different stages and manner of work as will enable any one to recognize the insect. The manner of work has already been given, so that we will begin with

THE LARVA.

In size, shape and color, this is almost identical with the larva of *Isosoma Hordei*. It is a small yellow or pale-orange footless worm, about .15 of an inch long, rather slender, and tapering slightly towards either end.

Under the better pocket-lenses a distinct tranverse head may be seen on one end of the body, armed beneath with a pair of brown jaws. Though footless, when in motion, it seems to push out little projections along the sides of the body by the aid of which, and a wriggling movement, it is capable of some progression. These are found on the inside of the stalks usually just above a joint, occasionally more than one in a place, but generally if there is more than one in a stalk they are in different internodes. In a previous part of this article I have stated that they are seldom found in the space between the upper joint and the head. I have found a very few of the grass form in that position, but cannot recall now finding any of the Wheat-stalk worms in that position. When about to pupate they are generally very close to the joint.

THE PUPA.

This is at first pale yellowish but finally jet-black, shinning, from, .10 to .12 of an inch long by about .02 of an inch wide. The pupa that formed in the summer, or rather that produced the flies in the summer, were in various parts of the gnawed chamber, but I notice those in the stubble the last of November are pretty well down in the tissure of the joint. In position, the pupa rests with the head upward.

The time of change from larva to pupa has been spoken of before. I cannot say just what time that change took place, with those not hatching out during the summer, for my observations on my specimens were not carried beyond August 30th, when a number of them were still in the larva state. Some further examinations were made in the grasses, but not in the wheat till the last of November, when all remaining were found to be pupæ. Of those that went through with all of their changes during the summer, none were observed as pupa up to July 8th, and July 20th a few perfect insects were observed. At this season, then, the pupal period did not last more than 13 days, and perhaps much less than that.

THE FLY.

The perfect insect is a small four-winged fly, somewhat resembling a wasp but much smaller, and belonging to the same scientific order or Hymenoptera. It is on an average .08 of an inch long, the females measuring .10 and the males .06 or .07 of an inch, the body is slender, straight, the abdomen gradually tapering from the base. The body, head and antennæ are black, the wings transparent, both under the microscope showing the presence of short minute hairs. The legs are variable. Out of 4 males and 10 females examined, all the males had all the femurs, or the basal-joints of the legs, yellow, the front tibiae, or second joint yellow, the middle and hind tibiae, yellow at the ends, but the rest dark or fuscous, and the terminal joints of the feet dusky, the others yellow. Six of the females had the femurs of the front legs fuscous or dusky, basal half of tibiae dusky, terminal joint of feet the same, all the rest yellow. The middle pair all yellow except the terminal joints of the feet. The hind pair like the front. Another specimen had all the femurs pale-red and the tibiae all dusky except at the ends, but probably the pale-red was yellow in life, as the poison by which they were killed, (cyanide of potassium) makes that change in yellow. Another specimen had the legs yellow where these were pale-red. Another like the first only the middle tibiae a little clouded at base. In all the specimens the terminal joint of each foot was dusky. The antennæ were a little enlarged at the end.

When the insect had cast off its pupa skin it gnawed a small round hole in the side of the stalk, just large enough to allow it to emerge, but inside the hole was considerably widened in its passage through the soft internal tissue. As the straw or stubble left in the fields through the winter becomes considerably decayed, this will not be a difficult task to those coming out in the spring.

REMEDIES.

The applied remedy for the Wheat-stalk worm must, so far as I can see, be the same as for the joint-worm; that is burning the straw and stubble. When the joint-worm was so destructive to barley in New York a number of years ago, the farmers refrained from raising barley for a year or two, or perhaps in some instances more, and of course they were not troubled with joint-worms in their barley, for a number of years at least. Such a remedy with this insect in the wheat would be like effective, but perhaps need not be resorted to now. If after harvest the straw be spread over the field, and both straw and stubble be burned, that must destroy the worms. As in Southern Illinois the weeds grow up rapidly after the wheat is cut, often to such an extent that it would be difficult to burn the stubble by the time the wheat is thrashed, it would be a good idea to run a mowing machine over the ground, allow the weeds to dry, and then burn stubble, straw and weeds, thus rendering the land free of foul growths as well as the next crop free from insects. As in other remedies of this kind, to be effectual, it must be participated in by all the farmers of a community, as the insects can readily fly from field to field.

Writers say that plowing under the stubble does not discommode the joint-worm, and from the fact that this insect is known to appear in great numbers two years in succession in the same field, it is doubtless true of the Wheat-stalk worms.

It has been ascertained that some insects are more numerous and consequently more troublesome some years than others, and that those years here occur at regularly marked intervals, depending upon the wetness and dryness of the seasons. Is this insect subject to the same law? I think it is, though I am aware I base that opinion on very small evidence. This year has been a dry season, there being scarcely any rain during the months of July and August, and for this reason, and this alone, I think four-fifths of the Wheat-stalk worms either changed to pupæ and produced the perfect insects or died.

Last year the most faithful care and watching of the infested stalks failed to produce any perfect insects; and I may add here that I have this year failed to get any perfect insects from my first lot of specimens collected, and which have been kept in the shade, though I have now live pupæ in that jar, all those I have raised being from specimens later gathered, after they had begun to feel some of the effects of the drought. Last year was more of an ordinary year, more favorable for the worms to undergo their transformations in their regular manner, for I believe to hatch out in great numbers during July and August is not their normal condition.

If I am correct in my conjecture, we may not look for very much trouble from that insect next year, nor perhaps for two or three years. If we take the one-fifth that were still larvæ August 20th, and deduct from them the number that would be likely to perish after that before pupating, and again the number that must be destroyed during the winter, the number left to provide for a brood next season becomes very small. Hence we may safely conclude, I think, that wheat will not be troubled with them next year to any great extent, and I think we have good reason to conclude that, if every seventh year is to be like 1881, the same effects will be produced as have been this year.

NOTE.—While the above is going through the press, I take the opportunity to make a correction. Since writing the article, *Isosoma Allynii* has been found to be a species of *Eupelmus*, another genus of the family *Chalcididæ*, and will be known as *E. Allynii*. During my investigation of the wheat-insect, I obtained from a stalk of a species of wild grass (*Elymus Canadensis*) another insect, a genuine *Isosoma*, working on the inside of the stalk in the same manner as the one on the inside of the wheat-straw which I described in the 'Canadian Entomologist" for January, 1882, as *Isosoma Elymi*. I have since obtained from my wheat-straws a number of wingless female insects that seem to be the same as the one obtained from the grass, and which were without doubt the authors of the mischief to the wheat. They agree in color except that the wingless specimens are a little lighter where both have pale markings Both have nine joints to the antennæ, these being black except at the base which is pale or brownish. The legs are brownish-black except the joints and feet which are pale, the feet being the lightest. The body is black, the abdomen jet-black, the head and thorax with a brownish tinge with a pale spot on the front part of the thorax above and on the sides, and some pale beneath. They differ some in size. The wingless ones are from .10 to .11 of an inch long, while the other is only .07 of an inch, but premature development may make the difference.

The genus *Eupelmus* is parasitic as far as known, and I presume *E. Allynii* is no exception. I may say that I have obtained another specimen of this species from a gall in a stalk produced evidently by the regular Joint-worm (*Isosoma Hordei*). From this and from the fact that my specimens were obtained from burrows made in the wheat-stalks by this new *Isosoma*, it seems to me that we have here a parasite on the real Wheat-stalk worm.

The above new facts make a little less forcible the effect of the dry summer upon the Wheat-stalk worms, though only partially negativing what was said on that subject, for quite a per cent. of the larvæ were found dead toward the close of the drouth, to which no other cause could be attributed than the dry weather. It should be borne in mind also that the *Eupelmui* is a probable destroyer of the real wheat enemy; and as far as I can see now the real Wheat-stalk worm is *Isosoma Elymi*.

G. H. FRENCH.

THE CORN-WORM, OR BOLL-WORM.

By Prof. G. H. French.

(*Heliothis armegera*, Hub.)

Most of the insects that come before the economic entomologist for consideration are comparatively local in their depredations, though a few are found over a large area. The Chinch-bug, so dreaded by the farmers of the Mississippi Valley, is almost unknown, except by name, to those of the eastern and central States; the Rocky Mountain Locust is dreaded only in a belt west of the Mississippi river. The Cotton-worm (*Aletiæ*) is of necessity confined to the cotton-producing States, and so on. On the other hand, the Colorado Potato Beetle may travel wherever the tuber is grown; the Cabbage-worm (*Pieris Rapæ*) seems inclined to spread over the whole United States, and the same may be said of a few others. The caterpiller now under consideration in a measure belongs to the latter class of insects. It has been found not only in various parts of our dominion, but in parts of the other continents. An insect, to enjoy such a wide range, must either feed upon a diversity of food, or upon some plant that is susceptible of cultivation under varying climatic situations—from the cold of Canada to the almost tropical heat of the Gulf States. Both of these may be said of the Corn-worm. As corn, in some of its varieties, may be cultivated in all portions of the Union, this plant may serve as food for this caterpillar; and it may be classed, wherever corn is raised, as an injurious insect upon that plant. But while this is true, the varied food habit of this insect is such that it feeds readily upon cotton in the Southern States; on tomatoes in the Central States, where that crop is almost a staple; and it has been found in various localities feeding on green beans and peas, upon the stem of the garden Gladiolus, and upon pumpkins. In Europe the list is increased by the addition of the heads of hemp and the leaves of tobacco and lucerne. In my article on this insect, in the Seventh Illinois Report of the State Entomologist, occurs this statement: "If I mistake not, I have found the same worm in the growing seed pod of a species of Hibiscus (*H. Grandiflora*) that grows along our streams." Lately I have examined pods of this plant sent me from Grand Tower, Ill., by Mr. John Marten, and I find the caterpillar within them resembling, in size and some of its markings, a third-grown Corn-worm, but in reality it is a Pyralid larva, related, I should judge, to the genus *Amphalocera*. These are what I found in the pods sent me, and the probability is that this rough, hairy plant does not form part of the food of this insect, though some of the smoother species may.

As may be supposed, an insect having so wide a range, and feeding upon such a diversity of plants, will be known in different localities by different names, as it seems to be more destructive to one or another of the plants that forms its food. Hence, in the South, where it is perhaps second to the Cotton-worm in destroying the staple of that region, it is known as the Boll-worm, because it feeds principally upon the growing bolls or pods or the unopened flower buds. Where cotton is seldom or never raised, but where this caterpillar disputes the claim of the farmer to his roasting ears, it is called the Corn-worm. Even in the South, where the worm is found on both cotton and corn, it has been common to speak of it by such names as would indicate the crops destroyed. If tomatoes, for some reason, form the staple of a section of country, then the habitual finding it half buried in the tomatoes gains for it the name of Tomato-worm; and it has usually been customary to write of the insect under one or the other of these titles, according to the class to be benefited by the writing.

But little need be said of this species from a purely scientific standpoint. It is admitted by entomologists that it belongs to the order *Lepidoptera*, family *Noctuidæ*, and genus and species as given at the head of this article. The habits of the larvæ of this family differ in that some are leaf-eating, while others have a boring habit, though not in the sense of the wood-boring beetles, for the boring is done in tissue comparatively soft or in hollow stems. A classification of this kind, while it does not place those together that quite agree in structure, would have its advantages when we consider the ways and means of preventing destruction to crops by them. This would place the species of *Heliothis* and allied genera with *Gortyna* and its allies. But this need not be discussed further here.

AS A BOLL-WORM.

As the northern portions of the United States are but little interested in the cultivation of cotton, and as Professor J. Henry Comstock has given a somewhat detailed account of the work of this insect in the cotton-fields, this branch of the subject may be passed over lightly. In doing this I shall give what will be practically a digest of Prof. Comstock's paper.

It appears that the eggs are deposited shortly after twilight, when the moths first begin to fly. Mr. Glover and Professor Riley state substantially that the eggs are deposited singly on the outside of the involucre surrounding the flower-bud or the young boll, but Professor Comstock states that he has found them upon other parts of the plants quite as much as upon the involucre. As soon as the egg is hatched, the young larva feeds upon the tender tissue of whatever portion of the plant it is upon. Soon after this, it begins to bore its way through the covering to the boll and into the boll itself; but if the egg is deposited upon a leaf or a stem, it may be several days from the time of hatching before it finds its way into the boll. In fact, Professor Comstock is of the opinion that a larva may attain its full growth by feeding upon the leaves, though this is evidently the exception and not the rule, as the instinct of the species seems to direct the young worm, as soon as it has eaten enough to give it the necessary strength, to seek for a flower-bed or a young boll. In this way a single caterpillar may destroy several bolls as it travels from one to another, eating out the more tender vital parts of the unopened buds, or the newly forming bolls. As a natural consequence, all the buds or bolls thus eaten wither and fall to the ground; but before doing so they are abandoned by the worm, which seeks for fresher food. When it has attained sufficient size, it attacks the larger bolls, eating out all or nearly all of the interior, causing that which is not eaten to decay by the rain that may enter the hole, or the exudation of sap from the wounded part.

Professor Comstock states that the destruction of the essential parts of the flower before the boll or the pistil has been fertilized, is sometimes as great a source of loss as the destruction of the maturing bolls. It should not be lost sight of, however, that in the economy of the plant, the destruction of a bud before it opens, or of a flower before the fruit begins to form, is not so exhaustive to the plant as the destruction of the fruit after it has wholly or partly formed. In the first place the effort of the plant to produce fruit has been thwarted before much of the nutriment for that purpose had been used, and new buds at once put forth in place of those destroyed, with the energy of the plant but little impaired. In the latter case, more of the nutritive material has gone into the fruit, and a less number of new buds will be formed than if the fruit were destroyed in its early stages. In plants that are practically ever-bearing by reason of not bearing profusely, this would have but little effect, but most plants have their limit of production, other than frost or other climatic changes. I would not say this with any view of disparaging any reports upon the amount of injury done to the crop by injury to the buds or young bolls, but to call attention to a fact that may be overlooked.

The extent of injury done to cotton in the South by this worm is estimated by Professor Comstock as scarcely less than that done by the Cotton-worm. He bases this conclusion partly upon his own observations, but largely upon reports received from others during the year that he was assigned to investigate the cotton insects, as well as a collation of facts from other reports upon the subject, covering the observations of a number of years. A few sentences culled from some of these reports may not be uninteresting:

"There is one other insect that has destroyed more cotton in this locality within the last four years *than all other insects* combined. It is known here as the Boll-worm."—[J. W. J., Titus Co., Texas.

"Many think that the Boll-worm is *more destructive on an average* than the Caterpillar, for the reason that it attacks the cotton, more or less, every year."—[H. H., Hawkinsville, Ala.

"The Boll-worm does us, upon the whole *more damage* than the Cotton-worm."—[A. J. C., Montezuma, Ga.

These are but fair samples of the opinions expressed in the extracts of reports in Professor Comstock's paper, showing the light in which the insect is held by the planters of the principal cotton-growing region. In Illinois, and other States adjoining, cotton does not form the staple product, but during the seasons it grows readily and comes to maturity through the southern counties, and, where raised, would be subject to the attacks of the Boll-worm the same as in the South.

Practically, we can not separate the work of this insect as a Boll-worm from its work as a Corn-worm, for it is pretty evident that these two plants, in a measure, supplement each other in carrying over the species from one season to another. In the cotton-growing region the early brood of worms is found in the terminal buds of the corn, while the late brood, after the corn has become too hard for them to longer feed upon, is found upon the cotton plants. It has been found that where a farmer had a field of corn in which he had taken pains to kill all the *Heliothis* worms, his cotton did not suffer from the Boll-worm. North of the cotton belt, the worm has the same habit, as has been shown by Mr. Treat, of New Jersey; but here there are but two broods of the worms, and the eggs for the last brood are usually deposited upon ears that are sufficiently late in maturing that the worms may get their growth before the corn hardens.

Before closing this part of the subject, it should be stated that, from examination of the buds and young bolls of cotton that had fallen withered to the ground, Professor Comstock is of the opinion that the amount of damage done by the Boll-worm is slightly over-estimated. Some of the buds showed evidences of having been pierced by some hemipterous or other beaked insect, instead of gnawed by the young Boll-worm. Others were probably blasted by rains or some other causes operating to prevent fertilization, which would result in blighting. This would take a little from the results of such estimates as were based upon the amount of those strewn upon the ground around the plants.

AS A CORN-WORM.

Where the season is long enough, and the summers sufficiently warm for corn to be grown, it may be subject to the attacks of Corn-worms, but it is only in the more moderately warm portions of the corn-growing region where serious damage is done. Professor Riley says, in his third Missouri Report:

> "I have seen whole fields of corn nearly ruined in this way in the State of Kentucky, but nowhere have I known it to be so destructive as in Southern Illinois."

Other extracts might be given to show that it is more destructive through a belt of about the latitude of Southern Illinois than further north or south. I would assign the following as a probable reason. In the South cotton seems to be preferred as a food-plant, and as soon as the cotton attains considerable size the moths deposit their eggs upon this instead of the corn. As early as 1858 an article to this effect appeared in the November number of the "American Cotton Planter," in which the writer says:

"Now, Mr. Editor, my opinion is that I can trace the worms from the corn-fields to the cotton-fields, though I may be mistaken in this; but the first place that I can find the worm, the same species, is in the corn-fields, in the roasting-ears. I have looked and examined in every hole and corner to find where they made their first appearance, and I can find them nowhere but in the corn-fields. There they may be found in the roasting-ears."

It is said that the Corn-worm or Boll-worm was unknown in the Southern States previous to 1841. It was not till 1854 that it was known that the two were identical, and then writers stated, as a reason for finding the same worm in both plants, that the corn matures with the first brood of worms, and hence the second and third broods are to be found feeding upon the cotton-plants. North of the section mentioned there are only two broods, with perhaps only one in the northern limit of the corn belt. Where there is only one brood, very few of the worms might be expected to be found, as is the case, for a large number of the chrysalids must be killed by freezing, from the accidental disintegration of their cells, by insects getting into their cells and feeding upon them, and other causes. The same causes are to be found working where there are two broods, causing the early brood to be less numerous than the late.

The amount of damage done to the corn by this insect varies with different seasons, some years but little; during others the corn over a considerable area may be so injured as to be of very little value. The oft-quoted report from Kansas is a case that well represents sections large or small, during years when the insect is numerous; and as it is so good an illustration I will quote it here:

"In 1860—the year of the great drought in Kansas—the corn crop in that State was almost entirely ruined by the Corn-worm. According to the 'Prairie Farmer' of January 31, 1861, one county there, which raised 435,000 bushels of corn in 1859, only produced 5,000 bushels of poor, wormy stuff in 1860; and this, we are told, was a fair sample of most of the counties in Kansas. The damage done was not by any means confined to the grain actually eaten by the worm, but, as we are informed in the same excellent article just now referred to, the ends of the ears of corn, when partially devoured and left by this worm, afforded a secure retreat for hundreds of small insects, which, under cover of the husk, finished the work of destruction commenced by the worm, eating holes in the grain or loosening them from the cob. A species of greenish-brown mould or fungus grew likewise in such situations, it appearing that the dampness from the exuded sap favored such a growth. Thus decay and destruction rapidly progressed, hidden by the husk from the eye of the unsuspecting farmer."—[Am. Ent., Vol. 2, p. 44.

During the summer of 1877 I found it quite numerous in some fields, but in others there were scarcely any. In my paper on Corn Insects, in the State Entomologist's report for that year, I referred to it as follows:

"As a general thing, I think it has not been so destructive during the past season as it is sometimes; but in one field of late corn I found nearly every ear eaten by them, there being from one to half a dozen worms to each ear. In many of them, when my observations were made while the corn was yet soft, the process of moulding and decay had progressed to such an extent that it was difficult to conceive that such corn could ever become anything fit for man or beast to eat. In some fields I visited the injury was much less, while in others only a few eaten ears could be found."—[Seventh Ill. Ent. Rep., p. 103.

During the same year, Professor Thomas received a letter from Mr. W. B. Brown, of Belvidere, Ill., accompanying some specimens of Corn-worms for identification, a portion of which will be of interest by showing that their injuries extended over a considerable area that season, and the freezing of the larvæ in the ear spoken of by Mr. Brown gives us a partial reason why they are not so numerous as far north as Northern Illinois. He says:

"I found them eating the corn from the cob, or rather they had been eating, for they were all dead when I discovered them, not having made the discovery till after a hard freeze. They commenced at the small end of the ear, and took it all as they went, apparently continuing to work around the ear. I found some ears from which the corn had been eaten off two or three inches."—[Seventh Ill. Ent. Rep., p. 102.

In his report on this insect as a Boll-worm, Professor Comstock says of its destruction of corn for that year, 1879:

"This very season, a writer from Cherokee county, Kansas, addressed Coleman's 'Rural World,' complaining bitterly of the destruction of the Corn-worm. He states that there was not an ear in his corn-field which the worms had not eaten."—[Rep. on Cotton Ins., p. 289.

In the "Pacific Rural" for August 16, 1879, I find the following inquiry in relation to the Corn-worm:

"Will you please inform me if there is any remedy for a worm which works into nearly every ear of sweet corn in my neighborhood, near Newcastle, Placer county."—[W. R. S., Sacramento, Cal.

I made no special observations during 1879, but, from what I saw and from inquiries of farmers, I know the worms were numerous here that year, but not so much so as some seasons. No further special mention of its injury came to my notice for that year.

The year 1880, with us, was much as the preceding year; as usual, some worms present in the corn, but the damage not sufficiently serious to call forth comment. I find the following in the November number of the "American Entomologist" for 1880, from E. W. Claypole, of Antioch College, O.:

"The Boll-worm, or Corn-worm, is exceedingly common and mischievous here this year. In some places every third ear contains a worm. In one or two points the published descriptions seem deficient. The second brood, now growing, feeds, no doubt, on the milky kernels by choice, but not by any means constantly, nor does it confine its mischief to a single ear. Leaving the one on which it has been engaged, it passes to a second, which involves a journey down one stalk and up another. This is probably performed in the night. Its mandibles are capable of gnawing not merely the juicy, milkey kernels of the young ear, but the harder, riper ones of the ear when nearly mature and ready to cut. In cutting my own corn, yesterday, I found many specimens of this insect, and there now lies before me an ear almost uninjured and nearly dry, the kernels being too hard to yield to the nail, and full of meal when broken, in which is an almost full-grown Corn-worm engaged in eating these hard grains. The worm has attacked the ear in two or three places, and eaten about half a dozen corns, so that it is very plain that it has not spent its whole existence in this ear. The infested ears may often be detected, on passing through the field, by seeing a hole in the husk, through which the worm has entered the ear, and a few days ago I saw a half-grown worm gnawing its way into an ear, and making just such a hole. When I caught it, it had bored through the outer sheath only, and was at work on the second."

In a postscript, Mr. Claypole states that he found a smaller worm eating kernels on a ripe ear of corn. Professor Riley was at first of opinion that they could not eat the ripe ears, but, in a later article, states that they had been found doing so. The traveling habit mentioned in the quotation agrees with the same habit noticed in their feeding on the cotton-plant. I have noticed holes through the husks surrounding an ear containing worms, and also that if the husks were long when ready to pupate, they would make their egress by gnawing through the husks. If an ear is placed in the breeding cage where the worms are confined, they gnaw through the husks to get to the kernels, even if they are loosened at the end.

From all I can gather for this year—1881—the Corn-worm seems to have done less damage in Illinois than usual. The excessive dry weather prevented there being any yield of corn in much of the southern part of the State, but the same cause prevented a large share of the moths from the early brood emerging from the chrysalids to provide for a second brood, so that what little corn there was raised was comparatively free from worms. Several correspondents in different parts of the State say substantially, "sweet corn injured by them but none in the fields." During the early part of September I spent a few days in Lawrence county. In examining a field of corn belonging to a Mr. Pence, near Lawrenceville, I found that not more than one ear in five or six examined contained worms, and none of these were badly eaten.

The eggs from which the Corn-worms are produced are deposited on the silk, or at least this is the case with that brood which works in the ear. As soon as the egg hatches, which takes only a few days, the young worm feeds upon the silk working its way down inside of the husks. If the husks project considerably above the ear the worm will be a third or more grown before it reaches the ear, but if the ear comes out nearly or quite to the ends of the husks young worms may be found feeding upon the soft kernels. During ordinary seasons, when the worms are not very numerous, seldom more than one worm will be found in an ear, but at other times there may be half a dozen. From this we might suppose that the habit of the moth is to deposit a single egg in a place and that the worms, when more than one in an ear, are the projeny of different moths. The fact that the half dozen or so worms that may be found in a single ear are of different sizes in a measure substantiates this assumption. As soon as they reach the ears they feed upon the kernels beneath the husks. Sometimes they eat only the outside portion of the kernels, at others they bore through the under side next to the cob, so that when the husks are stripped back the worms may be nearly half hidden in the corn. As the corn gets hard they generally stop work in it, though there is good evidence that they will sometimes eat the corn after it is ripe and hard. Mr. Claypole's letter, quoted above, shows that they may leave an ear after it becomes too hard for them and go to one that is softer. I have on the other hand found them dead and decaying in their burrows, though the cause of their death may have been from biting of other worms instead of a lack of suitable food.

The first or early brood of the worms are, according to different writers, to be found in the tassel of the corn just as it is coming out. Mrs. Mary Treat, of Vineland, N. J., has shown that this is the case there, while Professor Comstock asserts that "the so-called 'Bud-worms' of the Southern corn crop are nothing but this same early brood of *Heliothis*, having almost precisely similar habits to those observed in New Jersey by Mrs. Treat."

There are three broods of the worms in the Southern States, according to Mr. Glover and other writers. In Southern Illinois and other places of that latitude there are usually only two broods, though the difference of hatching of the spring moths make these broods quite irregular. In fact it is probable that there may be three broods of the projeny of the first hatched moths when we have an early spring and a late fall.

AS A TOMATO WORM.

As far as I can learn, Professor Riley was the first to ascertain the fact that the Corn-worm, or Boll-worm, is the same worm as the Tomato-worm. In the Am. Entomologist, Vol. 1, p. 212, we find the following from his pen:

"But this glutton is not even satisfied with ravaging these two great staples of the country—cotton and corn—but voraciously attacks the tomato in Southern Illinois, eating into the green fruit and thereby causing such fruit to rot. In this manner it often causes serious loss to the tomato-grower, and it may justly be considered the worst enemy to the tomato in that section of the country."

That such damage to the tomato is not confined to Southern Illinois, or to this country, may be seen from the following extract from Vol. 2 of the Am. Entomologist, p. 172:

"We learn from a recent number of 'Scientific Opinion,' that at a late meeting of the London Entomological Society, Mr. Jenner Weir exhibited specimens of our Cotton Boll-worm moth (*Heliothis armigera*, Hub.), which were bred from larvæ which fed on the fruit of the tomato. As we have already shown, this same species attacks our corn, and does great damage to our tomatoes by eating into the fruit; and the fact of its being bred from the tomato in England, where the fruit is with difficulty grown, is interesting and suggestive."

Mr. Glover reports that in Maryland, in 1869, this worm did great damage to the tomato crop, eating the ripe fruit as well as the unripe. It does not confine itself to a single tomato, but goes from one to another, gnawing holes in them, thereby causing them to wholly or partially decay, and rendering them unfit for market. The interior of the tomato is so juicy that it seems satisfied to remain on the outside of the fruit and gnaw in only so far as it can reach with the front part of its body, seeming to prefer the more solid outer portion. Professor Comstock reports that:

"Several specimens were recently (1879) sent to the department, with the remark that they were found boring into the terminal shoots of the tomato-plants at Macon, Ga., early in September."

This shows that as with cotton these worms do not eat the fruit alone, but may be found feeding upon other parts of the plant. During the present season (1881) I found quite a number of my tomatoes rotting, and in each instance the rotting proceeded from a hole that had been eaten in the side of the unripe fruit.

OTHER CULTIVATED PLANTS INJURED.

The other vegetables that are injured by the larva of *Heliothis Armigera* are peas, beans, and pumpkins, while tobacco has been mentioned as one of the plants upon which it is occasionally found. Mrs. Mary Treat, of Vineland, N. J., reported in 1879, that:

"This year green peas have been eaten into by a hateful looking worm, and a similar one ate into the staminate flowers of the corn before it tasseled out, commencing their depredations while the tassels were still enfolded in the leaves."

Mr. Wm. Frelease, as reported by Professor Comstock, found them eating garden peas in Alabama, stating that "a Boll-worm would bore a hole into the pod and devour its whole contents before leaving it for another," and other writers speak of the same habit. In fact it seems to thrive well upon not only peas and beans but upon a number of other allied leguminous plants.

THE EGG.

In shape the egg of this insect is nearly globular, a little flattened at the base, with a slight depression in the top or side opposite the base, and a series of ridges from this depression to the base. The diameter is about .02½ inches, and it is of a pale-straw color. Professor Comstock says:

"A noticeable feature of many of these eggs is an irregular reddish-brown band near the summits, which gradually disappears with the development of the embryo."

Mention has already been made of the places where these eggs are deposited when the larva feeds upon cotton and upon corn, and also that the eggs are fastened singly upon that on which the young larva is first to feed. Mr. Glover is authority for the assertion that a single moth may deposit over 500 eggs.

The time for the egg to hatch after it is deposited has not been ascertained, but is supposed to be from two or three days to a week.

THE LARVA.

When full grown the larva of *Heliothis armigera* is 1.50 inches long, nearly cylindrical, being a little thicker through the middle than at either extremity. There are two varieties of color; a green and a brown form, the variation seeming to have no relation to sex or age. In general color the first is a little paler than grass-green, with three stripes of darker green, which are arranged as follows: a narrow dorsal line, and, just below the sub-dorsal region, one on each side that reaches three-fourths of the distance from the sub-dorsal to the stigmata, or occupies the upper three-fourths of the sub-dorsal space. Under the glass the whole body above the stigmata is seen to be marked with fine greenish-white, longitudinal lines. The dorsal one of these fine lines is unbroken only at the intersection of the joints. The sub-dorsal fine line can be traced just above the lateral dark-green stripe, but is broken into from four to six parts on each joint. Between these two, or the dorsal space, there are five broken and somewhat irregular lines, the first bordering the outside of the dorsal dark-green stripe. On some joints these lines are not easily traced, but they can be on most of them. Along the stigmata there is a broad, pale, greenish-white stripe, bordered below by the sub-stigmatal line, which is more distinct greenish-white. This line comes lower down on the middle of each joint than at the ends, making a series of scallops instead of a straight line. The stigmatal stripe is mottled with pale green, but these mottlings cannot readily be traced into lines as they can in the dorsal space. The lateral dark stripe is also mottled with pale greenish-white, but not easily traced as lines. In the upper edge of this stripe, in the middle of each joint, next to the sub-dorsal line, is a small, purplish spot mottled with white; stigmata salmon, ringed with black; piliferous spots variable. The following are prominent and shining: those just above the stigmata and those on the dorsum of joint 11; the rest are scarcely noticeable. Those above the stigmata on joints 2 and 3 are black, but all the rest are the ground color, with a single short, brownish hair arising from each. Sub-stigmatal space the ground or general color; the venter whitish; legs green, the claws brown. Head ochraceous, mottled a little with greenish, especially in front; clypens pale; jaws dark-brown, each jaw with three strong teeth; on the side of the head there are five brown dots on the ocelli in a line from the labrum obliquely upwards. The cervical shield covers nearly all of the top of joint 1. There is a fine, short pile, seen only under the glass, that covers the whole of the body. This is white where there are greenish-white markings, but is black elsewhere.

The brown form is similar to the green in its markings, the pale stripes being pale purplish-brown, the dark stripes a darker shade of brown. The dorsal space is marked with the same number of whitish lines, but they are carneous-white instead of greenish-white, with mottlings of the same on the side where the green form is mottled. Stigmatal stripe pale-yellow, a little mottled with purplish, and the lower edge whitish; stigmata circled with white outside the black. The pile is the same as in the green form. The piliferous spots above the stigmate are circled with brown, the hairs gray.

Previous to 'the last moult the body is paler, but the prominent black piliferous spots, jaws, feet, cervical shield and anal plate make it appear darker. I have no notes upon the intermediate stages from the egg to the full-grown larva, and shall have to pass over that.

"The newly-hatched Boll-worm," says Professor Comstock, "walks like a geometric larva or looper, 'a measuring worm,' as it is often called. This is easily explained by the fact that, while in the full-grown worm the abdominal legs or pro-legs are all nearly equal in length, in the newly-hatched worm the second pair is slightly shorter than the third, and the first pair is shorter and slenderer than the second, a state of things approaching that in the full-grown Cotton-worm, though the difference in size in the former case is not nearly so marked as in the latter. This method of walking the worm loses with its first or second moult."

He further says, in speaking of the habits of the larva as a Cotton or Boll-worm:

"When hatched from an egg which has been deposited upon a leaf, they invariably made their first meal on the substance of the leaf, and then wandered about for a longer or shorter space of time, evidently seeking a boll or flower bud. It was always interesting to watch this seemingly aimless search, the young worm crawling first down the leaf stem and then back, then dropping a few inches by a silken thread, and then painfully working its way back again, until at last it found its boll or bud, or fell to the ground, where it was destroyed by ants."

Aside from the seeming almost omniverous habit of this larva as regards plants, there are numerous well authenticated accounts of the larger ones devouring smaller ones, and also of eating into the chrysalids of the Cotton-worm (*Aletea*). Mr. Frelease, as reported by Professor Comstock, states that on several occasions he saw large Boll-worms catch and devour smaller ones, while in other instances they would bite them until the juice would flow, when they would suck this out and reject the rest. Upon finding dead worms in their burrows beneath the husks in ears of corn, I was at first inclined to the opinion that they died from lack of proper food, the kernels having become hard; but further observation showed that they were bitten by others occupying the same ear. Upon taking full-grown worms in the hand, I have noticed that they give themselves little concern about trying to get away, but generally try to bite the hand, as though it mattered little to them what they ate.

THE CHRYSALIS.

When the larva attains its growth it descends to the ground, into which it goes to pupate. In doing this it usually selects some place where the earth is rather firm, seeming to prefer the security a compact soil can give to ease in digging. It digs a hole into this several inches in depth, apparently cementing the dirt as it goes downward, so that when it reaches the desired depth there is a smooth channel from the bottom to near the surface, there being a thin film of dirt over the entrance. This hole, as I found in digging about corn hills, is about a third of an inch in diameter, larger at the bottom than at the top, apparently so as to give free motion to the chrysalis, and usually bent in its course so that the lower part would have an inclination of often as much as forty-five degrees. I found the chrysalis at the bottom of this, the small end downward. In one instance I found a hole so bent that the chrysalis occupied a horizontal position.

In speaking of this habit, Mr. Wm. Frelease, as quoted by Professor Comstock, says:

"In deep breeding jars, with four or five inches of soil, I found that the larvæ of *Heliothis* went several inches from the surface before forming their cocoons, but did not notice a passage leading down. As I did not notice very closely, such a tube may have been there, but I think, if so, I should have seen some trace of it. In all cases there was a thin film of silk. In the fields I saw numbers plowed up, but did not dig for any with care. Of course the plowing would have destroyed such a tube, but I sometimes found the silk about the pupa, though always more or less torn."

The observations upon which the article in the Seventh Illinois Entomological Report was based were made during the winter of 1877–78. I began digging for the chrysalids in November in a field where the worms had been abundant in the corn, using at first a spade and digging at random. I had expected to find them in "oval cocoons," as they were supposed to make, but cutting across channels in which I afterwards found chrysalids led me to dig a little more carefully. I soon found that by running the spade along the row and taking off half an inch or less of the surface, I could tell where every chrysalis was to be found. The following passages from my note book kept at the time may perhaps be more satisfactory than any other way of stating it:

In digging around corn hills this afternoon I found several chrysalids, and one feature seemed strange or new. Instead of an oval cocoon, as is usual with most of our Noctuidæ, they were at the bottom of a round chamber that came almost to the top of the ground, nicely smoothed within, and the, lower end from three to four inches from the surface. Sometimes these were perpendicular, with the chrysalis resting on the small end in the bottom; at other times the top of the hole seemed perpendicular, while the lower part bent to one side and the chrysalis lay on its side, the head towards the opening or top. The cavity within was of about a third greater diameter above than the chrysalis, but the lower part was a little larger. The soil was damp, but dry enough to crumble when thrown out with the trowel. I could not see as the sides of the cavity were glued by any substance, but of that I could not tell; they seemed to cut the same as the rest of the dirt."—[Nov. 28, 1877.

"Went out this afternoon and found another chrysalis at the bottom of a sloping hole, under circumstances that enabled me to measure the depth, and also take up the lump of dirt containing the chrysalis. The hole was six inches deep from the surface, but standing so that it was about five inches perpendicularly from the surface to the bottom of the hole. Slope a curved one."—[Dec. 11, 1877.

A little more follows in this entry, but of no importance. The next entry is:

"Brought in six more to-day in the dirt in which found, and put them in two boxes. I find all that stops the top of the hole is a thin film of dirt from one-eighth to one-sixteenth of an inch thick. All are where the ground drains well, and is solid."—[Dec. 12, 1877.

The lump of dirt containing the channel and chrysalis, spoken of in the note of Dec. 11th, was kept just as it came from the field, and was shown to a number of persons. I may as well add one more note, though it relates more to the subject of remedies:

"Was out yesterday and obtained four more. I find that some of the first that I obtained and put in loose dirt, which I afterwards wet and allowed to freeze, are dead. This gives a hint as to a means of destroying them. If plowed in the fall, their nicely prepared cells, that now by their position are well drained and no loose dirt in them, would be broken up, and the chrysalis more or less exposed to the freezing in loose dirt, that would have the same effect as upon these, or destroy most of them."--[Dec. 14, 1877.

All of these observations, as may be seen from the dates, refer to the fall brood of worms. I dug for them from time to time through the winter, but found nothing different from what is given above. In no instance was there any loose silk about the chrysalis; though in the summer brood, and where the earth is more loose, this may, perhaps, be found. I doubt not the secretion that is made into a loose cocoon, as quoted from Mr. Frelease, and confirmed by Prof. Comstock, was in this case used in cementing the earth forming the sides of the channel, so as to make them smooth and somewhat firm. The lot taken up in their channels were allowed to freeze in them, without there being any loose dirt around them, and it seemed to have no effect upon them. This smooth, firm channel then seems to be for their protection from the effects of freezing in latitudes, where they must be subjected to its influence during the winter.

The following detailed description of the pupa is from Prof. Comstock:

"*Pupa*: Length, 20 min., (about .80 of an inch): color, reddish-brown, darker towards the head; polished. The following particulars will be noticed. when examined under the microscope: The head, which narrows in the region of the maxillae to a rounded, somewhat elevated ridge, is covered with minute and rather indistinct granulations, and has near the front a few shallow, transverse, impressed lines, which, however, do not entirely cross from one side to the other; there are also a few irregular impressions on the head behind the eye, and about midway between the posterior angle of the eye and the posterior margin of the head is an impressed puncture from which a very short stiff hair arises, and another shallow impression, somewhat in the shape of a V, may be found at the middle near the posterior margin; the sculpture of the thoracic segments is somewhat different from that of the head; the whole surface is closely and very finely faceted, and quite a number of irregular, shallow, impressed transverse lines run over the whole surface; the third ring is very much wrinkled; the surface of the abdominal rings is similarly sculptured; the front margins of rings four to seven is coarsely punctured; the fourth has only a few of these punctures, but on the other three rings they are quite numerous around the whole margin; the front portion of these punctures is deep, and they run out posteriorly, more or less, into a shallow, channel-like impression; the posterior margin is covered quite regularly with slightly elevated, darker-brown granules of different forms, some are square, others five, and others six-sided; the other rings, except the last, have nothing peculiar in their structure; the last segment is bluntly rounded, and furnished at the ends with two quite long, blunt, slender spines, which at their apical third are whitish, faintly bent upwards, with their tips sometimes slightly twisted and directed downwards; ventrally, this ring and the one before it have each a short longitudinal impressed line; the circumference of the stigmata is elevated, dark-brown, with the center ot a sandy color and spongy texture; the cases of the wings, legs, and antennæ are covered with shallow facets."

The duration of the pupal period varies with the brood, and somewhat with the season. In Southern Illinois, where my observations have been made, the summer broods seem to require from ten to fourteen days for the moth to emerge, while the brood that passes the winter as chrysalis, remains in this state several months. Towards the last of September, 1877, quite a number of the worms were collected and placed in a breeding case and fed, all pupating the last of that month, or the fore part of October. There, with other chrysalids collected during the winter, hatched the next season as follows: The first, May 22, then May 27, then June 11, 16, 17, 27, 28, July 4, 7, 11, 19 and the last July 29. In the meantime worms collected July 8, that pupated within the next two days, produced the moths July 20th and 29th. This is an over-lapping of at least one complete generation, and somewhat confuses our ideas of definite number of broods during a season. Until we have the time it takes to pass through the larval period it will be difficult to say just how many broods there may be in a given place. for the reason of so much irregularity of hatching of the moths from the chrysalids in the spring, though we are enabled from observations to approximate this. Prof. Riley, in his Third Missouri Report, says: "With us there are two or exceptionally three broods during a season." Mr. Glover says there are at least three broods in Georgia; while Prof. Comstock claims that in Central Alabama there are five broods, with a possibility of a sixth during exceptionally fine seasons, these making their first appearance in May, the first to the middle of June, the first or fore part of July, the fore part of August, and the fore part of September. In another place, speaking of the length of the larval period, he says:

"Judging from the data at hand, the duration of the larva state of *Heliothis*, or, in other words, the worm state, seems to vary from eighteen to twenty-four days in the cotton belt, depending much upon the climate, the state of the weather, and the food plant."

Taking the smaller of these two numbers with a chrysalis period of ten days, and allow two to five for the hatching of the egg, and there may be five broods in the locations where the observations were made, supposing that the first moths came out from the hibernating chrysalids in April or the fore part of May; though there might not be more than three or four broods of the projeny of the more tardy hatching moths. It is probable that with us the worms do not go through their transformations so rapidly, as all who rear insects know that an increase of general temperature accelerates their development, and a decrease retards it, making it probable that the number of broods here has been correctly stated.

I am inclined to doubt the insects hibernating in any condition but the chrysalis, though Prof. Riley, at the time of writing his Third Missouri Report, inclined to the opinion that the most of them hibernated in the moth state, and for two or more reasons. There is no evidence that there is a brood of worms in the South earlier than the last of April or the first of May, or here earlier than a month later than in the South. If the moth hibernated it seems to me there ought to be at least one generation of worms before these dates. My second reason is I have never found them in the winter. During the summer *Heliothis* moths are easily driven up in the day time, but I have never "flushed" one on a warm sunny day in the winter, though I have often been in the corn-fields at such times. It seems to me more probable that the late hatching of moths, that sometimes occurs during warm days in November, is an effort towards the production of another brood, and that the moths perish later in the season.

THE MOTH.

The moths vary in color and depth of shading, the females being darker and duller colored. The lighter males are light-gray, tinged with olive green, while the darker females are almost a tawny yellowish-gray. The hind-wings are paler, with a dark outer border containing a light spot in the center varying in size. The fore-wings are marked and shaded with olive and rufous with a blackish spot near the center. For a better identification I append the following detailed description:

Moth.—Expanse of wings 1.50 inches, or may vary from from 1.35 to 1.75 inches. The males are generally a light-yellowish-gray tinged with olive green, in some specimens the usual lines and marks showing but faintly. The transverse anterior and transverse posterior lines and the median shade, a slightly darker shade of olive, with a few black scales on the veins in the course of the transverse lines. Orbicular and veniform the same, the outlines faint, but usually a little black in both. On the outer margin a series of black intervenular dots. Fringes yellow at base, outside of this a dark line bordered each side with sordid white. Hind-wings paler than the fore-wings, more of a whitish shade, the veins a little darker, the discal cross-vein scarcely more distinct than the others, a broad, terminal, blackish border with a more or less distinct pale space in the center. Fringes, the base yellowish, the outer part whitish. The thorax is concolorous with the fore-wings, the abdomen with the pale portion of the hind-wings.

In the females the usual color is darker, almost a tawny yellow, with slight tinge of olive, the base and transverse lines, and the orbicular varying from a pale to almost a dark-yellowish-brown, the transverse posterior with a few white scales on the veins in part of its course, but very few black scales. Subterminal space often quite dusky. Terminal dots and fringes as in the males, on the latter darker. Hind-wings marked as in the males, but the dark veins and dark outer border more prominent. The most distinguishing feature of the under side, in both sexes, is a prominent dull-black veniform, the orbicular varying from a black dot to the size of the spot above, and a more or less distinct blackish subterminal space. In some specimens the posterior border of the hind-wings shows through.

REMEDIES.

These may be grouped under two general heads—natural and artificial. Under the first of these may be mentioned first,

PARASITES.

As a Corn-worm I do not know of any insect attacking the larvæ of *Hiliothis*, and we might expect them to be rare from its habit of feeding. When feeding in exposed places we might look for it to be subject to the attacks of Tachina-flies and other parasites. This would be more the case where it feeds upon cotton, or some other plant than corn. Professor Comstock says:

"Strange to say, but one parasite upon *Heliothis* has been found. This was bred from a chrysalis received September 15, 1879, and proved to be *Tachina Aletiæ.*"

The only other mention I find of any insect parasite is a casual mention in Professor Riley's fourth Missouri Report, that he had bred *Tachina Anonyma* from *Heliothis Armigera.* As a cotton insect it is known that ants, wasps, asilus flies, and a number of other predaceous insects do considerable towards lessening the number of these larvæ, and we might look for more of them to be destroyed there than where it works in corn, for they are more exposed.

CLIMATIC INFLUENCES.

From lack of information through a series of years, we are not able to say as much under this head as the interest of the subject cemands. From the fact that so few will persistently apply any remedies that look towards destruction of the worms, or take such measures as would be calculated to destroy the chrysalids, it becomes only partial protection to those who do destroy them. This is not very encouraging to those who try to protect their crops. On the other hand, remedies recommended are sometimes so expensive that, with the other expenses, there is but little margin of profit on the crop. In view of these things, the question that is pertinent is, do these insects visit given localities in more destructive numbers during certain periods of years than at other times, as has been proven with the Chinch-bug? In the absence of data showing how numerous they have been each year, as a corn insect, for instance, in a grain locality, we can only answer such a question by examining some of the conditions governing the periodical accumulations of other insects, and if the *Heliothis* larvæ are subject to the same influences, we can with some certainty say whether they may be expected in destructive numbers any given year or not.

In his lecture before the State Horticultural Society, December 15, 1880, Professor Thomas demonstrated that the "rainfall series appears to be divided into cycles of seven years each;" as, for instance, if one takes any given year, as 1881, and counts backward by sevens, it will be found that the average rainfall of those two years will bear about the same relation to the general average of the whole number of years that the year used as a starting point does. 1881 was a dry season through the Mississippi Valley, as was also 1874, 1867, 1860, etc. It is a well known fact that the years just mentioned were years in which Chinch-bugs were more destructive than during any intervening years, as Professor Thomas shows in his lecture.

These dry years were followed, all but the last, which has not yet expired, by seasons of more abundant rain, reaching its maximum the second year after the dry season or year. These wet seasons were followed by years of diminishing rainfall till the other extreme was reached, in the years mentioned. The increase of rainfall was destructive to the bugs, killing the old and preventing the growth and multiplication of the young- Their habits of living seemed to require such conditions for their gradual increase as were to be found in the decreasing rainfall of the years preceding the dry period.

Such, in brief, were the facts found by Professor Thomas in development of the Chinch-bug, and from a glance at the results, it will be seen that a farmer may predict, with considerable accuracy, the amount of damage he may expect to a field of corn during any year. Can he do the same of the *Heliothis?* I think we can, in a measure, but the same influences, we shall find, have the opposite effect that they do on the Chinch-bug.

We have not published data to go to for work of the *Heliothis* as a Corn-worm, as we have of the Chinch-bug or some other insects.

In certain localities some of the worms are expected every year. On account of this fact, and the other that they do their work out of sight and are not noticed till the corn is gathered, mention is seldom made in reports of any kind whether they are numerous or not. We have, however, a little information of the effects of certain climatic influences upon them, and this, with other data at hand, may enable us to draw at least some probable conclusion. Professor Comstock, on the influence of weather, says:

"It seems to be a pretty generally settled point among planters, so far as we can ascertain, that the Ball-worm is influenced by the weather in a similar manner to *Aletia;* that is to say, that they flourish best in wet seasons, and in dry sunshiny weather do least damage. The testimony on this point is hardly as unanimous as with the Cotton-worm, but it is sufficiently so to enable us with justice to make the general statement."

The causes to which these results are by him attributed are principally two; the influence a moist season would have in producing a rank growth of vegetation, which would be more suited to the growth of the caterpillars than one more stunted and pinched in its growth, as it would be in a dry season; and the work of ants. He then gives the results of some observations of his correspondents, in which several half-grown larvæ, transferred from the corn to cotton, were in each instance found and killed by ants, and concludes that ants are more abundant during dry sunshiny weather than in wet, and also on dry ground than on wet. That ants destroy a great many *Heliothis* larvæ when feedi g exposed, as upon cotton, is undoubtedly true, but when the same worms are working around an ear of corn securely hid by the husks, they are not troubled by ants; but the action of dry weather in toughening corn and other plants eaten by them, must have its effect in retarding their development. I noticed in a field of corn that had been topped, the topping had hastened the ripening of the ears, and also hastened, apparently, the departure of the worms from them. There had been plenty of them in the ears, but little damage was done.

Do observations sustain these theories? As regards the work of the insect on cotton, there is no reason to dispute what has been said. With us the present season—1881—has been a very dry one. During the fore part of this season there was some complaint that early sweet corn was considerably eaten by Corn-worms in several parts of the State, but I could not learn that even as much damage as usual was done to the field corn. As stated in another place, I examined a field of fine corn in Lawrence county, and could find scarcely any worms, or places where they had been. Other examinations and inquiries about here gave the same results. 1871, the dry year seven years ago, in which Chinch-bugs reigned supreme all over the State, and the Locust devastated the West, there were, so far as my observations went, not worms enough to be noticed. I would not make this as a general statement, for I have no facts upon which to base it as such, but such as apply to the limited area over which my observation extended.

In 1874, according to Dr. Thomas' tables, the average rainfall was 33.75 inches; in 1875, it was 34.86 inches; in 1876, 45.66 inches, and in 1877, 39.09 inches. I made no special observations in 1876, the year of the greatest rainfall, but did in 1877, and found them quite abundant in many parts of the State, though perhaps not so much so as some years. In those fields examined by myself, there would be found one or more in almost every ear, while one field was almost destroyed by them.

This is, perhaps, a small amount of evidence upon which to base a theory, but it certainly looks as though we had reason to say that they are more numerous and destructive during wet seasons than dry. If that be the case, and if we can, from the records we have of the past, say with considerable certainty that a given year will be wet or will be dry, then we can say with some assurance that if wet we may expect in that wet region the *Heliothis* to be abundant; but if dry the number of its larvæ will be small and but little damage done by it.

In addition to the causes already given, of destruction of the worms by ants, and the influence of a dry season in toughening and stunting the growth of the food-plant, we may, I think, find another cause for there being a minimum of worms during a dry season in the lack of the ability of the chrysalids to go through their transformations, or to produce perfect moths. A certain amount of moisture is necessary that a chrysalis may produce a perfect moth. If the ground and air be too dry, the chrysalis will dry up and die. If this does not take place, and the moth emerge from the pupa case, the wings may contain too little moisture to expand, and the insect dies soon after. This, of course, would operate to lessen the number of the second brood of worms here, and I think has been one of the principal reasons during the present season.

ARTIFICIAL REMEDIES.

To be successful, these must in part vary according to the kind of crop to be protected, and the locality, though some may be of general application. In regard to corn, we may mention,

EARLY PLANTING.

Professor Riley expressed the opinion in his third Missouri Report, that corn that was planted early, as well as that planted late, was more exposed to the attacks of worms than that which would come in between. The earliest corn would be attacked by the first brood of worms, while the late would be ready for the second. There would be this difference in many seasons. The second brood would usually be far more numerous than the first, though they might not be in a dry season. In my report on Corn Insects, in the Seventh Illinois Report, I give the following result of my observations:

"Near the town of Carbondale were two fields of corn, that were separated only by a rail fence, the one planted early, the other late. I passed through both fields September 24th [1877], and found no worms in the early piece and no signs of their work, while in the other field fully nine-tenths of the ears were wormy. There might have been a few ears in the first piece that had had worms, but all I would say is that I did not succeed in finding any by examining quite a number of ears as I passed through the field. Of other fields examined I found the early planted but little molested, while that which was late planted was considerably so."

TOPPING CORN.

In the same report I gave the result of some observations on this point, and as I have made no special observations since, I will quote that here:

"During the latter part of September [1877] I had a chance to examine two fields of corn in Union county, that had been topped for the fodder. The work had been done about ten days before. I should say that ninety per cent. of the ears at this time were quite hard and husks dry. From an examination of a large number of ears I found only two worms, and they were in ears that were still green. Nearly one half the ears showed the work of the worms at the ends, but to a more limited extent than usual. My conclusions were that topping the corn had hastened the ripening, thus rendering it difficult for the worm to eat it; and at the same time, as the ears now stood out in the sun, unshaded by the stalks and leaves, the extra heat rendered it uncomfortable for the worm and hastened his departure. There was but little injury sustained by the corn in this case, for the ends of the ears were but little eaten and were dry. When we remember that a considerable portion of the early part of their lives is spent in the silk before reaching the ears, it is plain that hastening the ripening of the corn must considerably lessen the amount of damage done by them."

TALL VARIETIES OF CORN.

I had for some time noticed that corn on which the ears were high on the stalks was comparatively free from the worms, though other corn, near by, was badly eaten; but it did not occur to me till 1878 that the height of the ears had anything to do with it. That year I had growing in my garden some low sweet corn and some pop corn, on which the ears were from five to six feet from the ground. The sweet corn was very wormy, while there were no worms in the other. At first I thought it might be owing to the difference in variety of corn, which did perhaps make some difference, but I found upon further examination in other fields that similar results were noticeable, though farmers say it does not always hold good. The only explanation I can offer is that naturally the moths fly low, and are more liable to deposit upon low plants than upon high ones. I have often noticed that when driven up during the day time, they do not fly to a height of more than three or four feet. It seems to me advantage might be taken of this in raising sweet corn for market by planting the field in some tall variety, but interspersing it with hills of some low variety, to act as a protection to the mass of the crop. The extra price for sweet corn without worms it would seem would amply pay for the extra hills and time.

FALL PLOWING.

The extracts from my note book for 1877, given in another place, point to this as a remedy. As intimated there, I found the chrysalids in the ground about corn hills in the bottom of channels, from near the surface down several inches, the sides of the holes smooth and perhaps cemented to make them firm. I found that when sections of these chambers, with the chrysalids in them, but no loose dirt around them, were submitted to freezing, no injury was done to the pupæ, but that when similar chrysalids were mixed with loose dirt, moistened as much as the others and submitted to the same temperature, they were killed. As a result of those experiments my conclusions were, that so long as they were in the smooth compartments they had made for themselves, free from any loose dirt that would become wet and stick to them, they could pass the winter in safety, even though they might be frozen, but when the dirt was packed loosely round them, and became wet and stuck to them, freezing killed them Their holes, running cell-like as they do from the surface down into the ground five or six inches, must be broken up by plowing. When once broken up, with the loose dirt surrounding them, the rains and freezing weather of our northern winters would have the same effect on the chrysalids that moisture and freezing had on those in the box of loose dirt. This, of course, would be less effectual, and perhaps do no good, where the land does not freeze deep enough to reach the chrysalids.

MITES.

In digging for chrysalids, more particularly during the latter part of the winter of 1877-78, I found many dead ones that were literally alive with these little creatures, and the conditions seemed to be these: Where the earth in which the worm had burrowed was rather firm, so that the walls of the chamber 'were smooth and compact, I found no mites; but where the earth was not so firm, so that little crevices might be found in the walls through which the mites could enter, then they had done so, and were living on the contents of the chamber. This item would properly come under the head of parasites, were it not that we have a hint here in regard to the cultivation of the ground. If well cultivated while the corn is growing, as well as made mellow before planting, the loose soil will render them defenceless against these little foes, besides giving a more vigorous growth to the corn.

The following is a summary of the remedies Professor Comstock recommended for this insect as a Boll-worm, aside from those already given.

TOPPING.

For reasons not necessary to repeat here, he shows that topping cotton, as is sometimes urged as a means of destroying the eggs, does not produce the desired result, and he advises against it.

POISONING.

For the reason that the greater number of eggs are laid upon the leaves, and that the young larvæ feed upon the leaf tissue before going to the bolls or flower buds, is good reason why a poison, well distributed over the plant, would destroy large numbers of the worms. As another reason, many of the worms when traveling from boll to boll stop to feed upon the leaves, and these would also fall victims to the poison. The proper time to poison cotton for the Boll-worm is about a week after full grown worms are found in the hardening ears of corn.

HAND-PICKING.

Hand picking of the worms from the cotton-plant is not recommended, but taking the worms from ears of corn and destroying them is urged. As far back as 1855, Col. B. B. Sorsby, of Columbus, Georgia, found that when this was done his cotton did not suffer from the Boll-worm, though his neighbors had plenty of them. Professor Comstock has the following on the subject from his correspondent, Mr. Frelease:

"Since the earliest broods of larvæ are to be found on the maize or Indian corn, first in the stalk, later in the ears, and since the tendency of the species to multiply in geometrical progression, makes it desirable to destroy the early broods, if possible, I would suggest hand-picking of these earlier broods as the best way known to me of dealing with the pest. As was stated, when speaking of the natural history of *Heliothis*, if one of these larvæ has taken up its abode in a stalk of corn, the fact can be detected by a very superficial examination, owing to the holes formed in the leaves. Let, then, each plow hand be instructed, when cultivating the corn, to stop wherever he finds such a stalk and catch and kill the worm, even though it should occasionally be necessary to destroy the plant in doing this, for the hill may be replanted, and the larvæ thus killed might, if suffered to live, become in a few generations the parents of hundreds of Boll-worms. Later, after the corn is laid by and has begun to fruit, boys may be sent through the fields to kill the 'Tassel-worms,' the presence of which may be detected by the excrement at the end of the ear, or by the silk being eaten away. To catch these it will be only necessary to open the husk for a short distance back from the end of the ear, and from the ease of discovering affected ears, the expense will not be great. It is objected to this that ears so opened are exposed to the weather and to the attacks of birds. Though it must be admitted that this is true to a certain point, the destruction of all ears so interfered with does not follow, and the great lessening of the next crop of Boll-worms will, I am certain, more than pay for what corn is sacrificed.

ROTATION OF CROPS.

As *Heliothis* has so many food plants he does not recommend this. While this may be true in regard to cotton, if the areas that are planted to corn one year were to be sown to some small grain the next, the result would be beneficial without a doubt. It might not prove a perfect protection, but I am confident it would a partial one to not only this but other insects.

DESTROYING THE MOTHS.

Several have recommended what may be denominated the "sugaring" process. The usual method is to take ordinary dinner plates into which are put a mixture of vinegar and molasses. These were set upon stakes driven into the ground, with a suitable board on top to hold the plate. These raised to or a little above the level of the cotton, and distributed over the field would attract the moths as they fly over the field for the purpose of depositing their eggs, and in their greed for the mixture would become entangled in it, when they could be killed in the morning, if not already drowned

As these moths fly to a light, various forms of lanterns with a space below containing a liquid to drown the moths, have been devised and used with more or less success These devises have the advantage that they kill other insects at the same time, and when the moths are numerous will be very effective.

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